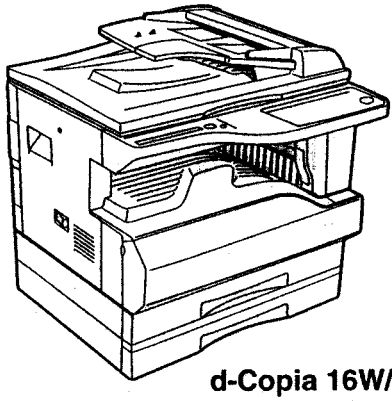
SERVICE MANUAL



d-Copia 16W/20W
(with option installed)

DIGITAL COPIER

MODEL d-Copia 16W/20W

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Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

CAUTION

This product is a class 1 laser product that complies with 21CFR 1040.10 and 1040.11 of the CDRH standard and IEC825. This means that this machine does not produce hazardous laser radiation. The use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
This laser radiation is not a danger to the skin, but when an exact focusing of the laser beam is achieved on the eye's retina, there is the danger of spot damage to the retina.
The following cautions must be observed to avoid exposure of the laser beam to your eyes at the time of servicing.

1) When a problem in the laser optical unit has occurred, the whole optical unit must be exchanged as a unit, not as individual parts.
2) Do not look into the machine with the main switch turned on after removing the developer unit, toner cartridge, and drum cartridge.
3) Do not look into the laser beam exposure slit of the laser optical unit with the connector connected when removing and installing the optical system.
4) The middle frame contains the safety interlock switch.
   Do not defeat the safety interlock by inserting wedges or other items into the switch slot.

Warning!
This product is a class A product.
If it is operated in households, offices or similar surroundings, it can produce radio interferences at other appliances, so that the user has to take adequate countermeasures.

CLASS 1 LASER PRODUCT

LASER KLASSE 1

LUOKAN 1 LASERLAITE

KLASS 1 LASERAPPARAT

VAROITUS!
LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING
OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

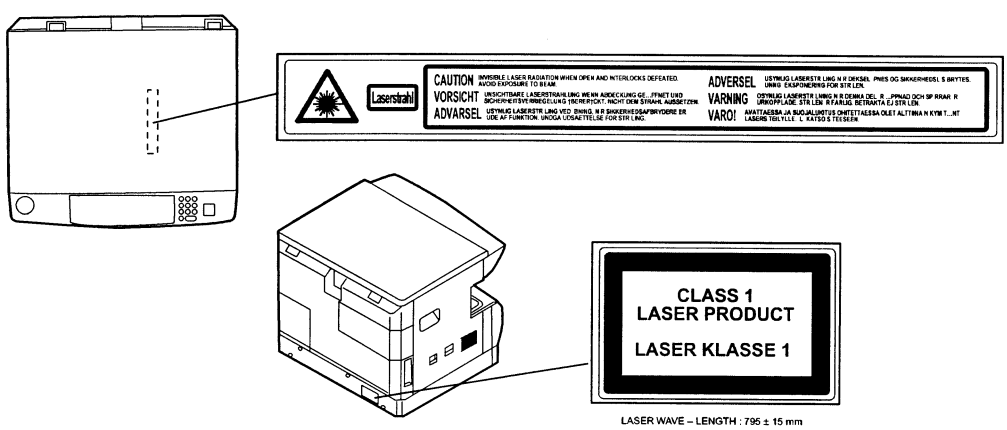
CAUTION
INVISIBLE LASER RADIATION,
WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

VORSICHT
UNSICHTBARE LASERSTRAHLUNG,
WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.

VARO !
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN.

ADVARSEL
USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLNING.

VARNING !
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN. – STRÅLEN ÄR FARLIG.



LASER WAVE – LENGTH : 795 ± 15 mm
Pulse times : 0.481 ms/6 mm
Out put power : 5 mW

Disconnect the AC cord before servicing the unit.

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[1] GENERAL

Follow the cautions below when using this machine.

1. Cautions on using

A. Warning

- The fusing area is hot. Exercise care in this area when removing misfed paper.
- Do not look directly at the light source. Doing so may damage your eyes.

B. Caution

- Do not switch the machine rapidly on and off. After turning the machine off, wait 10 to 15 seconds before turning it back on.
- Machine power must be turned off before installing any supplies.
- Place the machine on a firm, level surface.
- Do not install the machine in a humid or dusty location.
- When the machine is not used for a long time, for example, during prolonged holidays, turn the power switch off and remove the power cord from the outlet.
- When moving the machine, be sure to turn the power switch off and remove the power cord from the outlet.
- Do not cover the machine with a dust cover, cloth or plastic film while the power is on. Doing so may prevent heat dissipation, damaging the machine.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.
- The socket-outlet should be installed near the machine and should be easily accessible.

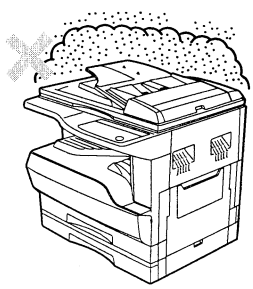
2. Important points when selecting an installation site

•Improper installation may damage the machine. Please note the following during initial installation and whenever the machine is moved.

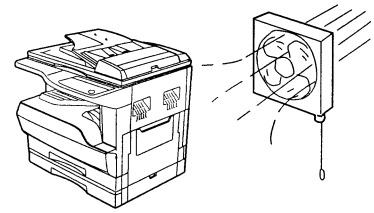
Caution:If the machine is moved from a cool place to a warm place, condensation may form inside the machine. Operation in this condition will cause poor copy quality and malfunctions. Leave the machine at room temperature for at least 2 hours before use.

A. Do not install your machine in areas that are:

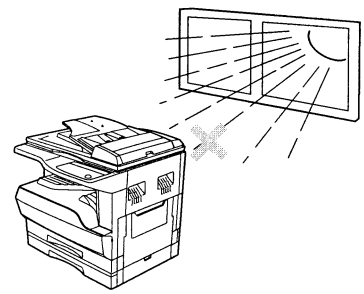
- damp, humid, or very dusty



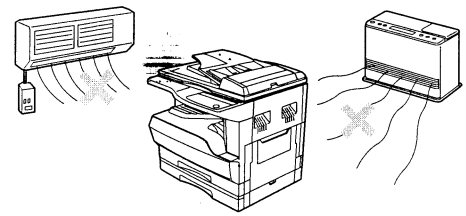
- poorly ventilated



- exposed to direct sunlight



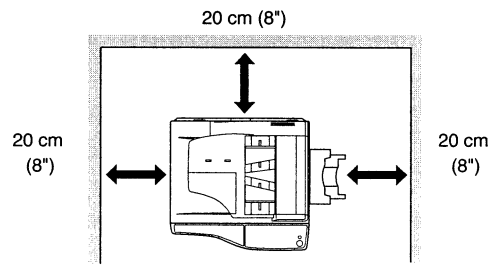
- subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.



The machine should be installed near an accessible power outlet for easy connection and disconnection.
Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements. Also make certain the outlet is properly grounded.

Note: Connect the machine to a power outlet which is not used for other electric appliances. If a lighting fixture is connected to the same outlet, the light may flicker.

Be sure to allow the required space around the machine for servicing and proper ventilation.



[2] SPECIFICATIONS

1. General Information of Copy

A. Model

Model	Desk-top
Output	Wing less

B. Product List

	Model name
MFP 16cpm	d-Copia 16W
MFP 20cpm	d-Copia 20W
SPF	SPF 16W
Upper Heat Roller	UPPER ROLL 16W

C. Copy Speed

	16-cpm model	20-cpm model
Per scanning multi copy	16cpm	20cpm

Note: When A4/Letter is used.

(1) Copy Speed in Original Size

Paper size	16-cpm model	20-cpm model
A3	9	11
B4	10	12
A4(Portrait)	16	20
A4(Landscape)	12	14
B5(Portrait)	16	20
B5(Landscape)	14	16
11"x17"	9	10
8-1/2"x14"	10	12
8-1/2"x13"	11	12
8-1/2"x11"(Portrait)	16	20
8-1/2"x11"(Landscape)	12	15
A5/INV	16	20

Note: In the setting of 11 sets, measuring time from the completion of output of 1st paper to the completion of 11th paper.

(2) Copy Speed in Enlarged Size

Paper size	16-cpm model	20-cpm model
A3	9	11
B4	10	12
A4(Portrait)	16	20
A4(Landscape)	12	14
B5(Portrait)	16	20
B5(Landscape)	14	16
11"x17"	9	10
8-1/2"x14"	10	12
8-1/2"x13"	11	12
8-1/2"x11"(Portrait)	16	20
8-1/2"x11"(Landscape)	12	15
A5/INV	16	20

Note: The slowest copy speed when making enlarged/reduced size copy is indicated.

In the setting of 11 sets, measuring time from the completion of output of 1st paper to the completion of 11th paper.

(3) Copy Speed in Reduced Size

Paper size	16-cpm model	20-cpm model
A3	9	11
B4	10	12
A4(Portrait)	16	20
A4(Landscape)	12	14
B5(Portrait)	16	20
B5(Landscape)	14	16
11"x17"	9	10
8-1/2"x14"	10	12
8-1/2"x13"	11	12
8-1/2"x11"(Portrait)	16	20
8-1/2"x11"(Landscape)	12	15
A5/INV	16	20

Note: The slowest copy speed when making enlarged/reduced size copy is indicated.

In the setting of 11 sets, measuring time from the completion of output of 1st paper to the completion of 11th paper.

D. First Copy Time

Speed	7.2 seconds (600x300dpi AE mode/A4, Letter/Cassette/Platen)

Note: When feeding/outputting A 4/letter paper from the top paper tray

Note: Under the polygon ready condition

Top tray	7.2 seconds or less
Second tray	8.5 seconds or less
Bypass tray	7.5 seconds or less

First copy time from the paper feeding unit

SPF, selected	12sec or less

Note: When feeding A4/letter paper from the top paper tray.

E. Original Table (Platen)

Model	16-cpm model	20-cpm model
Max. Original size	A3/11"x17"	
Original alignment Position	Left center alignment	
Detection system	None	
OR guide display	A3/A4,11,B4/B5,8.5,A4/A5,B5R,A5R,5.5	

F. Paper Feed

Model	16-cpm model	20-cpm model
Copy size (Max. to Min.)	(AB type) Cassette: A3 to A 5 (only top tray for A5) Bypass tray: A3 to A6, Postcard (Inch type) Cassette: 11x17 to 8.5x5.5 (only top tray for 8.5x5.5) Bypass tray: 11x17 to 8.5x5.5	
Paper feed style	Feed from foldable multi bypass tray + one front paper tray	
Paper capacity	16-cpm model: Std 250x1+100 (When using 80g/m² paper) 20-cpm model: Std 250x2+100 (When using 80g/m² paper)	
Paper remaining detection	Cassette: only empty detection system Bypass tray: only empty detection system	

Details of paper feed unit

Feed tray of main unit

Feed paper size	A3/B4/A4/A4R/B5/B5R/A5(only top tray) 11x17/8.5x14/8.5x13/8.5x11/8.5x11R/ 5.5x8.5(only top tray)
Paper weight	56g/m² to 90g/m²
Paper kind	Standard paper(56 to 90g/m²)
Paper size switching	User setting
Set Paper size	AB type: A3/B4/A4/A4R/B5/B5R/A5/ Inch type: 11x17/8.5x14/8.5x13/8.5x11/ 8.5x11R/5.5x8.5/
Special paper	Recycled paper
Cassette removal/attachment	Available
Cassette removal/attachment detection	Available

Bypass tray unit

Manual feed type	Foldable bypass tray
Paper size	AB type: A3~A6, Postcard Inch type:11x17~8.5x5.5
Paper weight	56~200g/m²
Size detection	None
Paper kind	Standard and Thick paper (56~200g/m²), Special paper (Recycled paper, Envelope, OHP, Label)
Bypass tray guide display	(AB type and Inch type): A3/A4, 11, B4/B5, 8.5, A4/A5, B5R, A5R, 5.5
Single paper feed	Standard and Thick paper (56~200g/m²), OHP/ Label/Postcard
Multi paper feed	Standard paper (56 to 128g/m²)(100 sheets:56~80g/m²)//Recycled paper (100 sheets) /Envelope (AB type: 10 sheets, Inch type: 5 sheets)

Special paper

Special paper kind	AB type: Recycled paper/OHP/Label / Envelope/Thick paper (~200g/m²) Inch type: Recycled paper/OHP/Label/ Envelope/Postcard/Thick paper (~200g/m²)

Note: The system should feed 3 hole-punched papers without stacking, even if the actuator position is displaced in 10mm from the center.

Shipping style/Default size

Model	16-cpm model	20-cpm model
Main unit top tray	AB type: A4 Inch type: 8.5x11	

G. Job Speed

Model	16-cpm model	20-cpm model
S→S(top tray)	16 cpm. (100%)	20 cpm. (100%)

Note: When selecting SPF, A4/Letter, Original size copy, Paper from top tray

H. Multi Copy

Max. number of paper	999 sheets (99 through user simulation)

Note: 99 settable through user simulation.

I. Warm Up

Warm up time	45sec
Pre-heat	Available
Jam recovery	45sec or less (Conditions: Standard condition after leaving the door open for 60 seconds,and polygon motor stops)

J.Copy Ratio

Under normal mode

Model	16-cpm model	20-cpm model
Preset ratio	AB type: 50, 70, 81, 86, 100, 115, 122, 141, 200% (When using SPF, only 50, 70, 81, 86, 100, 115, 122, 141, 200%)	
Zoom range	25 to 400%(When using SPF, only 50 to 200%)	
Independent ratio range	25 to 400% for either Portrait/Landscape (When using SPF, only 50 to 200%)	

K. Exposure (Print Density)

Exposure mode	Auto/Text/Photo
Manual setting levels	5 levels (Text/Photo)
Resolution	Output: 600x600dpi Scan: 600(main)x600(sub)dpi(photo mode), 600(main)x300(sub)dpi(AE mode)
Gradation	Scan: 256 gradation Output: 2 levels
Toner save mode	Available (Setting for each local area)

L. Blank Width

Void area	Front end: 1 to 4mm, Back end: 4mm or less, Both side: Max. approximately 4mm
Image loss	4mm or less

Note: When making original size /one-sided copies

Note: First sheet from the bypass tray is not allowed to have back end void.

M. Auto Duplex Copy

Standard/Option	Not available

N. Paper Output/Finishing

Main unit (250 sheets tray)

Output paper side	Face down
Output paper capacity	250 sheets
Full paper detection	None
Finishing	
Electronic sort	None
Offset function	None
Staple function	None

O. Additional Functions

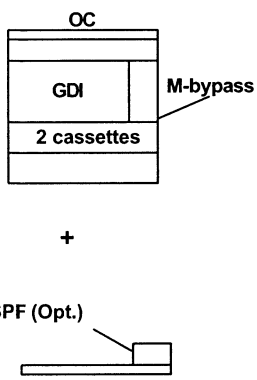
Copy machine functions

APS	No
AMS	Yes
Auto tray switching	Yes
Memory copy	Yes
Rotation copy	No
Electronic sort	No
Rotation sort	No
Independent Zoom	Yes
1set 2 copy	Yes. [Not effective in case of Enlarged copy and in case of using SPF due to patent issue]
Margin	No
Edge erase	No
Center erase	No
Black/White reverse	No
2 in 1/4 in 2	No
Sorter	No
Pre-heat function	Yes Conditions are to be set with user program
Auto shut off function	Yes Conditions are to be set with user program
User programming	Yes
Total counter	Yes (Total, Print and Copy counters are available)
Duplex copy	No
Toner saving	Yes (Local setting)
Account control	Yes (Copy: 20 accounts)

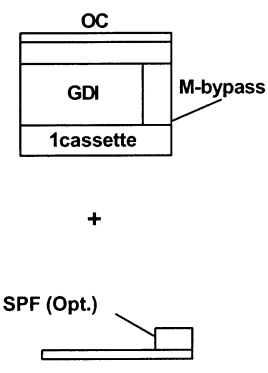
P. Machine Configuration

	Product	Power supply	Note
Main Unit	20-cpm model d-Copia 20W	AC power supply	Multifunctional machine, Standard 20-cpm model, GDI printer, SPF(Opt), 2 standard cassettes,
	16-cpm model d-Copia 16W	AC power supply	Multifunctional machine, Standard 16-cpm model, GDI printer, SPF(Opt), 1 standard cassette,

d-Copia 20W



d-Copia 16W



Model (Product)	16-cpm model	20-cpm model	Note
	Power supply (Drive unit)		
SPF	Supply from main unit (separated drive unit)		
GDI Printer	Supply from main unit		Printer Driver

Q. Other Specifications

Model	16-cpm model	20-cpm model
Photoreceptor	OPC drum	
Photoreceptorø	30 mm	
Process cleaning	Blade	
Exposure lamp	Cold cathode lamp	
Development style	Dry 2component magnetic brush development	
Charging style	Charged saw-tooth method	
Transcription style	(+)DC colotron	
Resist style	(-)DC colotron	
Fixing style	Heat roller	
Process speed	88mm/s	

R. Packaging

Model	16-cpm model	20-cpm model
Main unit	Main unit & Accessories	

S. Appearance

WxDxH(mm)

Model	16-cpm model	20-cpm model
1 cassette model (Floor to glass surface)	590(W) x 577(D) x 435(H)	
1 cassette model (Floor to OC)	590(W)x577(D)x470(H)	
1 cassette model (Floor to SPF)	590(W)x577(D)x568(H)	
2 cassettes model (Floor to glass surface)	590(W)x577(D)x520(H)	
2 cassettes model (Floor to OC)	590(W)x577(D)x555(H)	
2 cassettes model (Floor to SPF)	590(W)x577(D)x653(H)	

Machine occupied area (mm)

Only main unit (W/O handle)	590(W)x577(D)
Main unit with multi bypass tray expanded	883(W)x577(D)

Weight

d-Copia 20W	36.3kg w/o DV
d-Copia 16W	31.0kg w/o DV

T. Power Supply

Voltage	230V(common in 200V),240V
Frequency	Common in 50/60Hz
Power switch	1 power supply

U. Power Consumption

Power consumption

Max. power consumption	1200W
Average power consumption during operation	550 W or less
Power consumption during sleep mode	5W
Energy consumption efficiency	25W or less

Note: It has to meet the law concerning the Rational Use of Energy, the Energy Star Program.

V. Supply Outline

SRU model	Life
Drum cartridge	50K
Toner cartridge	16K
Developer	50K
Upper Heat Roller	150K

W. Maintenance Outline

Model	16/20-cpm model
Maintenance cycle	5k/7.5k/10k/25K/50K/FREE
Required time for installation	20minutes (It has to be completed within 30 minute to install the full options.)
Required time for maintenance	15 minutes
Other	Take it into consideration to improve the maintenance efficiency.

X. Reliability

MCBF	28k
MCBJ	10k
Target user CV (Copier machine)	Average 2,000 to 3,000sheets/month
Target user CV (MFP machine)	Average 4,000 to 5,000sheets/month
Machine life	300k

Y. Noise

Noise level	It has to meet the standards such as SS, Blue Angel, and Nordic Swan

Z. Environmental & Safety Requirements

Design has to meet the requirements of the following environmental programs.

Environmental Program	International Energy Star Program
Safety	CE

AA. Ozone & Dust

Model	16/20-cpm model
Specified value	Ozone: 0.02mg/m^3 or less Dust: 0.075mg/m^3 or less Styrene: 0.07mg/m^3 or less

AB. Digital Performance

Resolution	Scan	600x600dpi (Photo mode) / 600x300dpi(AE mode)
	Output	600x600dpi
Gradation	Scan	256 gradations
	Output	2 levels
Memory		16MB
Hard disk		None

AC. Chassis Color

	Frosty white

AD. Option

(1) Single Pass Feeder (SPF)

Model	SPF 16W
Original set direction	Upward
Original set position	Center right
Original delivery type	Sheet through type
Original feeding order	Feeding from top
Original size	AB type: A3 to A 5 Inch type: 11x17 to 8.5x5.5
Original weight	56 to 90g/m^2(15 to 24 lbs)
Capacity of set original	40 sheets (30 sheets (one sheet is 90g/m^2) have to be available) (Above B4 and 8.5x13 are 30 sheets.) Thickness: 4mm or less:up to 40 sheets
Dimensions	W583mm x D435mm x H133mm
Weight	5.0kg
Power supply	Power supply from main unit, power consumption 21W
Original size detection	Equipped (Upper part of the original feeder tray)
Detection size	Overseas AB type: A3, B4, A4, A4R, B5, B5R, A5, A5R
Guide display	A3/A4, 11, B4/B5, 8.5, A4R/A5, B5R, A5R, 5.5
Original out of specification	OHP film, hole-punched paper, Photo, Catalogue
Multi copy	S→S available, S-D not available
Mixed originals	Mixed paper feed Under copy mode: Not available
	Random feed: Not available
Original reverse	None
Display (LED)	None
Reliability	MCBJ Same as main unit MCBF Same as main unit
Original switching speed (in standard copy)	S→S: 16-cpm model 16 cpms /minute switching rate 100% 20-cpm model 20 cpms /minute switching rate 100%
	S→D: N/A
	D→D: N/A
Enclosed material	Installation manual
Chassis color	Frosty white
Installation	It has to be easy to install.

2.General Information of Printer

GDI print

Print speed	12PPM (GDI Printing, USB1.1, A4/Letter) Condition: Host PC: clock 500 MHz, memory 256 MB or more Original data: Testchart-B1.doc
First print	7.2sec.
Resolution	600dpi
Duplex print	None
Paper feed	From paper tray and bypass tray
Shifter	None
Support OS	Windows 95/98/ME/2000/NT4.0/XP
Emulation	GDI
Interface	IEEE1284(ECP, Compatible) USB1.1
PnP support	Support on Windows 95/98/ME/2000/XP
Software	Status Window
ROPM function	None

*TEST Method for print speed: In the setting of 11 sets, measuring time from the completion of 1st paper to the completion of output of 11th paper.

3. Paper Handling

About paper handling:

Paper handling means a series of process that user specify the tray to feed and to output the paper.

Therefore paper handling is explained in "Feed" and "Output" sections separately as follows.

A. Paper handling Configuration

The following table indicates paper handling unit configuration.

Paper handling		20-cpm model	16-cpm model
Paper Input	Bypass tray	Std	Std
	Top tray	Std	Std
	Second tray	Std	N/A
Duplex		N/A	N/A
Paper output		Std	Std
Shifter		N/A	N/A

B. Support Media

(1) Supported Media for Feed/Output of Peripheral Device

The following table indicates media input/output, availability of double-sided copy for each paper size and type.

		Paper input			Main unit output
Paper type	Size	Bypass tray	Top tray	Second tray	Main unit output
A6R	105x148	Yes	N/A	N/A	Yes
B6R	128x182	Yes	N/A	N/A	Yes
Invoice 8.5x5.5 in.	215.9x139.7	Yes	Yes	N/A	Yes
Invoice-R 5.5x8.5 in	139.7x215.9	Yes	N/A	N/A	Yes
A5	210x148	Yes	Yes	N/A	Yes
A5R	148x210	Yes	N/A	N/A	Yes
B5	257x182	Yes	Yes	Yes	Yes
B5R	182x257	Yes	Yes	Yes	Yes
Executive-R 7.35x10.5in.	186.7x266.7	Yes	N/A	N/A	Yes
Letter 11x8.5in	279.4x215.9	Yes	Yes	Yes	Yes
Letter-R 8.5x11in	215.9x279.4	Yes	Yes	Yes	Yes
A4	297x210	Yes	Yes	Yes	Yes
A4-R	210x297	Yes	Yes	Yes	Yes
Folio 8.3x13	210x330	Yes	N/A	N/A	Yes
Legal 8.5x14in.	215.9x355.6	Yes	Yes	Yes	Yes
Foolscap 8.5 x 13 in	215.9x330.2	Yes	Yes	Yes	Yes
B4	257x364	Yes	Yes	Yes	Yes
A3	297x420	Yes	Yes	Yes	Yes
Ledger 11 x 17 in	279.4x431.8	Yes	Yes	Yes	Yes
8K	270x390	Yes	Yes	Yes	Yes
16K	270x195	Yes	Yes	Yes	Yes
16KR	195x270	Yes	Yes	Yes	Yes
COM10	104.8x241.3	Yes	N/A	N/A	Yes
COM9	98.4x225.4	Yes	N/A	N/A	Yes
C5	162x229	Yes	N/A	N/A	Yes
DL	110x220	Yes	N/A	N/A	Yes
Postcard	100x148	Yes	N/A	N/A	Yes
Double postal card	200x148	Yes	N/A	N/A	Yes
Long envelope type 3	120.1x235	Yes	N/A	N/A	Yes
Transparency		Yes	N/A	N/A	Yes
Heavy stock		Yes	N/A	N/A	Yes
Label		Yes	N/A	N/A	Yes

(2) Paper Size Settable

AB type

A3 / B4 / A4 / A4R / A5 / Extra

C. Feed

(1) Feed from Cassette /Multi Bypass Tray

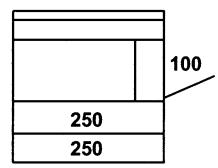
AB type

Feed entry	Feed capacity	Paper size	Paper weight	Special paper	Style
Tray	250 sheets	A3, B4, A4, B5, A5 (Only top tray for A5)	56 to 80g/m² 90g/m²: Up to the top line of the cassette	Recycled paper	Paper guide is to be set by user.
Multi bypass tray	100 sheets	A3, B4, A4, B5, A5, A6	Single-feed 56 to 200g/m², Multiple-feed : 56 to 128g/m²	Recycled paper, OHP, Label, Envelope 10 sheets,	Paper guide is to be set by user.

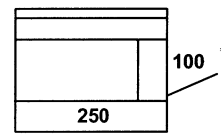
(2) Feed Unit Configuration

Feed cassette configuration is as follows.

d-Copia 20W (20cpm)



d-Copia 16W (16cpm)



d-Copia 16W has one standard cassette and optional cassette is not available.

d-Copia 20W has two standard cassettes and optional cassette is not available.

D. Output

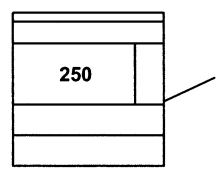
(1) Output of Main Unit

250 sheets can be kept in the output tray.

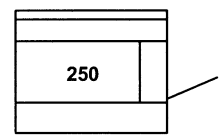
Shifter is not available.

Job separator is not available.

d-Copia 20W (20cpm)



d-Copia 16W (16cpm)



Output part is as follows

Output tray	Output sheets	Full detection	Offset	Max. size	Remarks
Main unit tray	250	No	No	11x17	

(2) Offset Function

Not available

4. Others

A. Coin vender

Not available

B. Auditor

Not available

5. Copy Quality

Copy quality will be based on Standard environmental condition.

A. Image Density (I. D.)

Mode	Check Position	Spec.	Test Chart
Normal	* f 55 (black circle) area Measure 3 points on the f 55 (black circle) area of the copy (one central point, one point 10mm above the central point and one point 10mm below the central point) and get the medium value.	1.2 or higher	Sharp A2 Chart (O.D.=1.5 or higher)

* Measurement condition: Should be within -20% of the ID spec in the operating environment.

•Take 10 copies and get the average density.

•Avoid check, when Toner Empty is near.

B. Background

Measure the level of whiteness of paper before and after copy (measure the same point) to obtain the difference, which will be background.

(1) Test Chart : Sharp A2 Chart

(2) BG will be as below at Standard optimal exposure

1.5 or lower

(3) Others

•Take 10 copies and get the average BG. When taking copies, ensure that the Test Chart, table glass, mirror and lens are clean.

•To be within 20% of the above BG values at the operational condition.

•Judgement of optimal exposure may slightly differ by people, so it is acceptable if both image density and background satisfy the required levels.

C. Resolution

The position on the resolution Test Chart where the half or more lines look separated will be defined as resolution of the copy.

(1) Test Chart: Sharp A2 Chart

(2) Spec.

Enlargement/Reduction	Copy Center	Corner
95~105%	5.0 lines/mm	4.5 lines/mm
106~200%	5.0 lines/mm	4.5 lines/mm
94~50%	3.6 lines/mm	3.2 lines/mm

* For reduction copy, the spec. is only a reference due to moire.

D. Halftone Reproduction (Gradation)

(1) Photo Reproduction

- Text: 5 steps or more (including B&W)
- Photo: 10 steps or more (including B&W)

* Use KODAK Gray Scale as Test Chart.

E. Color Reproduction

Will be checked by Standard Copy Sample.

Use KODAK Color Control Patches as Test Chart.

F. Exposure Curve

Will be checked by Standard Copy Samples of EX1 and EX5 at Full Size (100%).

Use KODAK Gray Scale as Test Chart.

G. Fusing Performance

Toner adhesion level on paper: 60% or higher (when measured by the fusing level tester.)

H. Environmental Conditions

Will be defined as below to guarantee Copy Quality and machine operation.

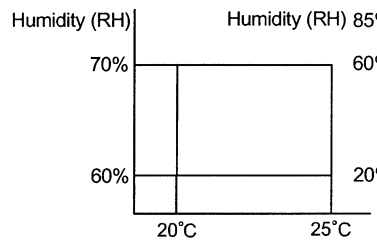
(1) Standard condition: Temperature 20~25°C , Humidity 65±5%RH

(2) Operational condition: for 60 months

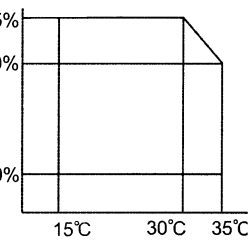
(3) Transportation condition: for 2 weeks

(4) Supply storage condition: for 24 months from production month

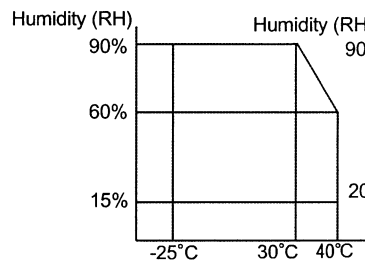
(1) Standard condition



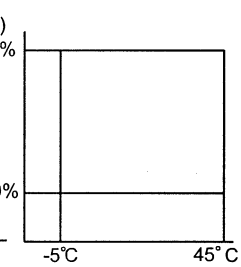
(2) Operational condition



(3) Transportation condition



(4) Supply storage condition



6. Specification List

A.d-Copia 20W

		d-Copia 20W
CPM		20CPM
Supply Type	SRU/CRU	SRU
SOPM		Yes
Standard Paper Tray	1Tray	-
	2Tray	Yes
MB (MultiBypass) (100)		Yes
Optional Paper Tray	1Tray	No
	2Tray	No
Original Detection		No
Original Cover	Standard	Yes
	Option	-
SPF	Standard	-
	Option	Yes
RSPF	Standard	No
	Option	No
Duplex		No
E-sort	Standard	No
	Option	No
X/Y Zoom		Yes
Dual Page Copy Mode		Yes
Shifter		No
Interface	Parallel	Yes
	USB1.1	Yes
	USB2.0	No
Printer	Standard	GDI
	Option	No
Color Scanner	Standard	No
	Option	No
PCL6 Printer	Standard	No
	Option	No
PS3 Printer	Standard	No
	Option	No
Network	Standard	No
	Option	No
Toner Save Mode	On	-
(Default)	Off	Yes
Packing	SD/CM	Designed by Olivetti
	Language	
Operation Label	Toner Replace Label	Yes (same as SC)
	Jam Release Label	Yes (same as SC)
Toner	Included in machine	No
Developer	Included in machine	No
Drum	Included in machine	Yes
Address Label for Scanner		No
Operation Manual/Setup Guide (Paper)		Yes (Italian)
CD-ROM*	Printer Driver	GDI (English, Spanish, Italian, French, Portuguese, German, Dutch, Swedish, Norwegian, Danish, Finnish)
	Online manual	Yes (PDF data) (Customized by Olivetti)
	Operation manual	
	Setup Guide	
USB ID	Vender ID	0B3C
	Product ID	A805

*Note: Contents of CD-ROM is as follow.

1. Printer Driver (developed by Sharp)
2. Online manual, Operation manual and setup guide (Customized by Olivetti)

B.d-Copia 16W

		d-Copia 16W
CPM		16CPM
Supply Type	SRU/CRU	SRU
SOPM		Yes
Standard Paper Tray	1Tray	Yes
	2Tray	-
MB (MultiBypass) (100)		Yes
Optional Paper Tray	1Tray	No
	2Tray	No
Original Detection		No
Original Cover	Standard	Yes
	Option	-
SPF	Standard	-
	Option	Yes
RSPF	Standard	No
	Option	No
Duplex		No
E-sort	Standard	No
	Option	No
X/Y Zoom		Yes
Dual Page Copy Mode		Yes
Shifter		No
Interface	Parallel	Yes
	USB1.1	Yes
	USB2.0	No
Printer	Standard	GDI
	Option	-
Color Scanner	Standard	No
	Option	No
PCL6 Printer	Standard	No
	Option	No
PS3 Printer	Standard	No
	Option	No
Network	Standard	No
	Option	No
Toner Save Mode	On	-
(Default)	Off	Yes
Packing	SD/CM	Designed by Olivetti
	Language	
Operation Label	Toner Replace Label	Yes (same as SC)
	Jam Release Label	Yes (same as SC)
Toner	Included in machine	No
Developer	Included in machine	No
Drum	Included in machine	Yes
Address Label for Scanner		No
Operation Manual/Setup Guide (Paper)		Yes (Italian)
CD-ROM*	Printer Driver	GDI (English, Spanish, Italian, French, Portuguese, German, Dutch, Swedish, Norwegian, Danish, Finnish)
	Online manual	Yes (PDF data) (Customized by Olivetti)
	Operation manual	
	Setup Guide	
USB ID	Vender ID	0B3C
	Product ID	A804

*Note: Contents of CD-ROM is as follow.

1. Printer Driver (developed by Sharp)
2. Online manual, Operation manual and setup guide (Customized by Olivetti)

[3] CONSUMABLE PARTS

1. Supply system table

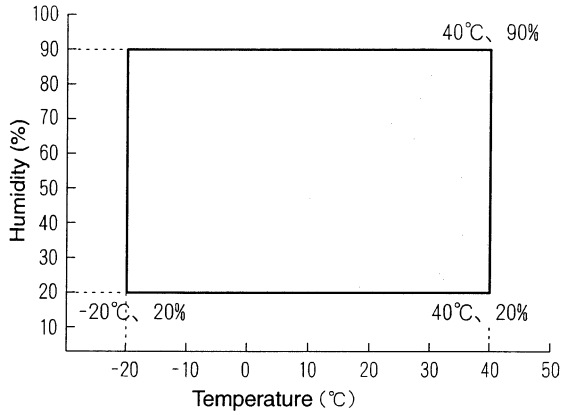
NO	Name	Content		Life	Product name	Remark
1	Toner cartridge(Black)	Toner (Toner: Net Weight 537g) Vinyl bag	x10 x10	160K (16k x 10)	TONER 16W	Life setting by A4 6% document
2	Developer(Black)	Developer (Developer : Net Weight 400g)	x10	500K (50k x 10)	DEVELOPER 16W	
3	Drum	OPC Drum Drum fixing plate	x1 x1	50K	DRUM 16W	

Note 1: The individual carton is printed with English, German, French, and Spanish as well as the green mark.

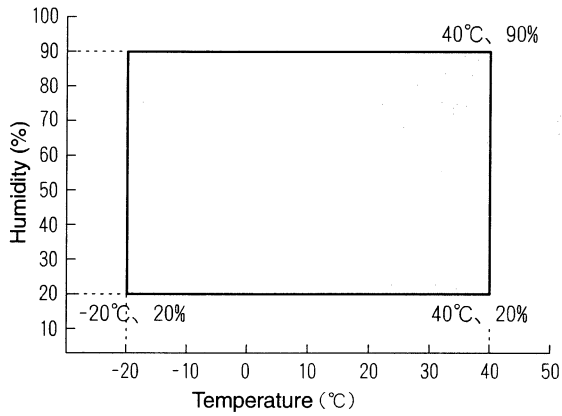
2. Environmental conditions

A. Transport conditions

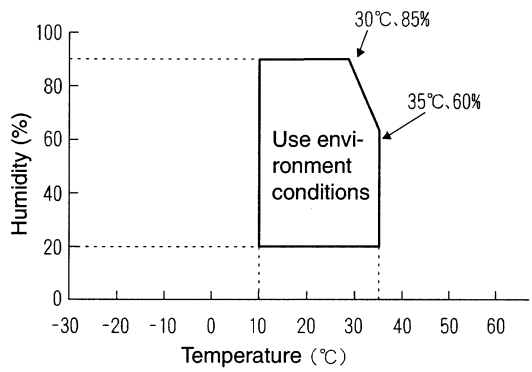
(1) Transport conditions



(2) Storage conditions



B. Use conditions



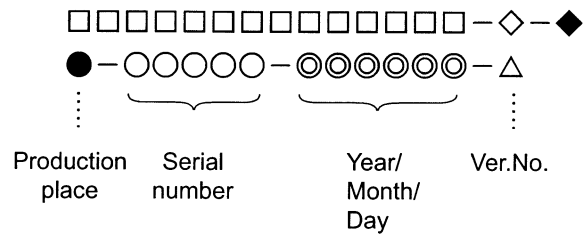
C. Life(packed conditions)

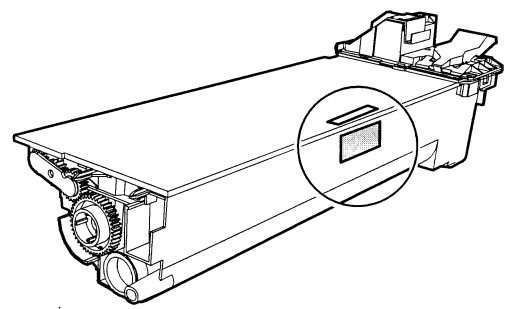
Photoconductor drum (36 months from the production month)
Developer, toner (24 months from the production month)

3. Production number identification

<Toner cartridge>

The label on the toner cartridge shows the date of production.



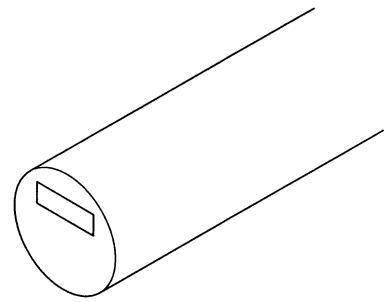


<Drum cartridge>

The lot number, printed on the front side flange, is composed of 6 digits, each digit showing the following content:

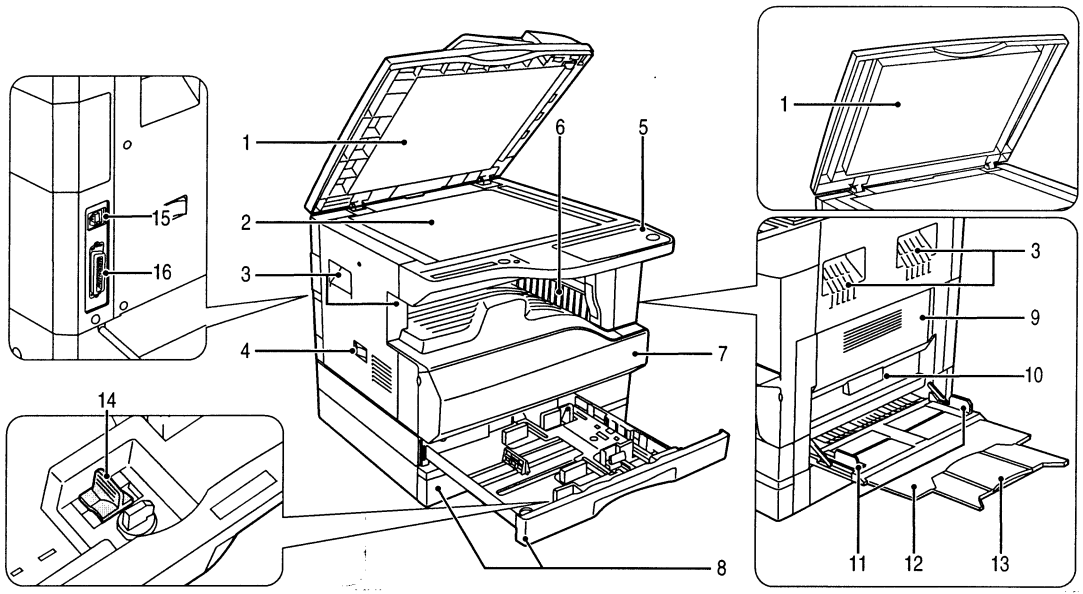
1	2	3	4	5	6

1	Alphabet Indicates the model conformity code. A for this model.
2	Number Indicates the end digit of the production year.
3	Number or X, Y, Z Indicates the month of packing. X stands for October, Y November, and Z December.
4/5	Number Indicates the day of the month of packing.
6	Alphabet Indicates the production factory. "A" for Nara Plant, "C" for SOCC



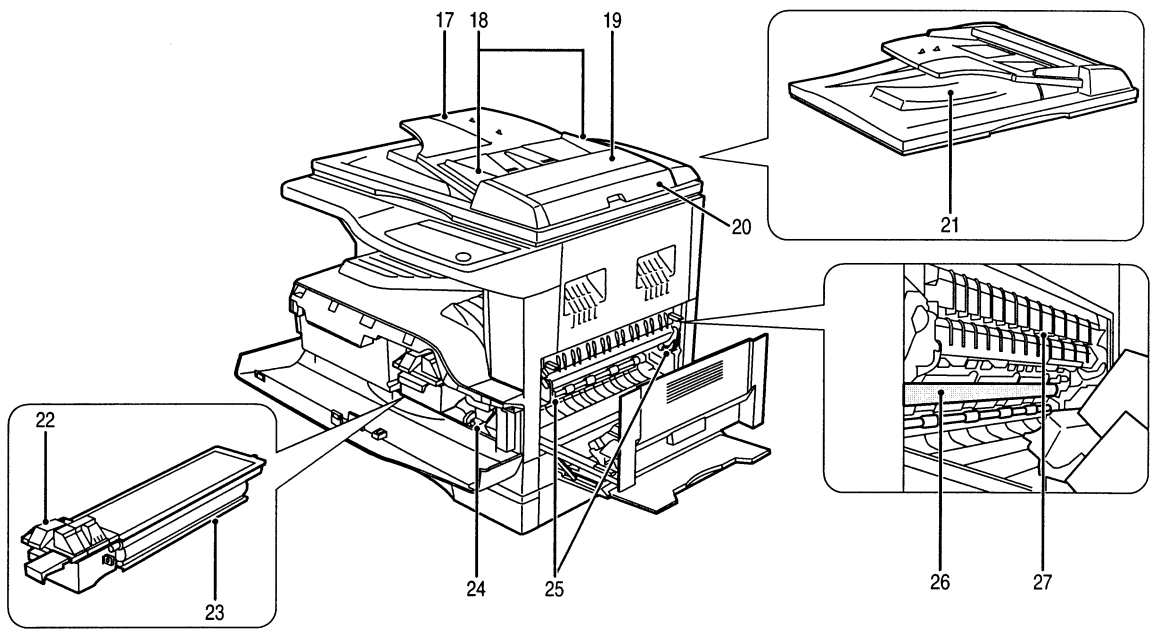
[4] EXTERNAL VIEWS AND INTERNAL STRUCTURES

1. Appearance



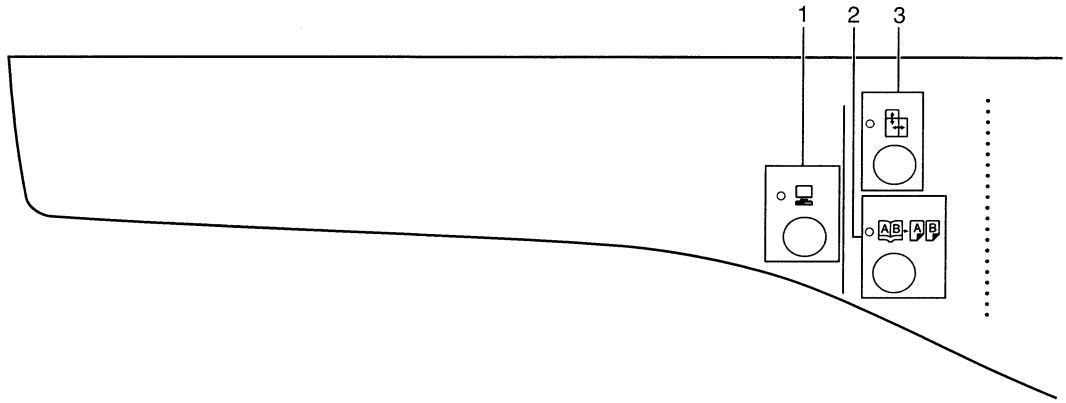
1	Document feeder cover (when the SPF is installed) /document cover	2	Document glass	3	Handles
4	Power switch	5	Operation panel	6	Paper output tray
7	Front cover	8	Paper trays	9	Side cover
10	Side cover handle	11	Bypass tray guides	12	Bypass tray
13	Bypass tray extension	14	Charger cleaner	15	USB 1.1 connector
16	Parallel connector				

2. Internal

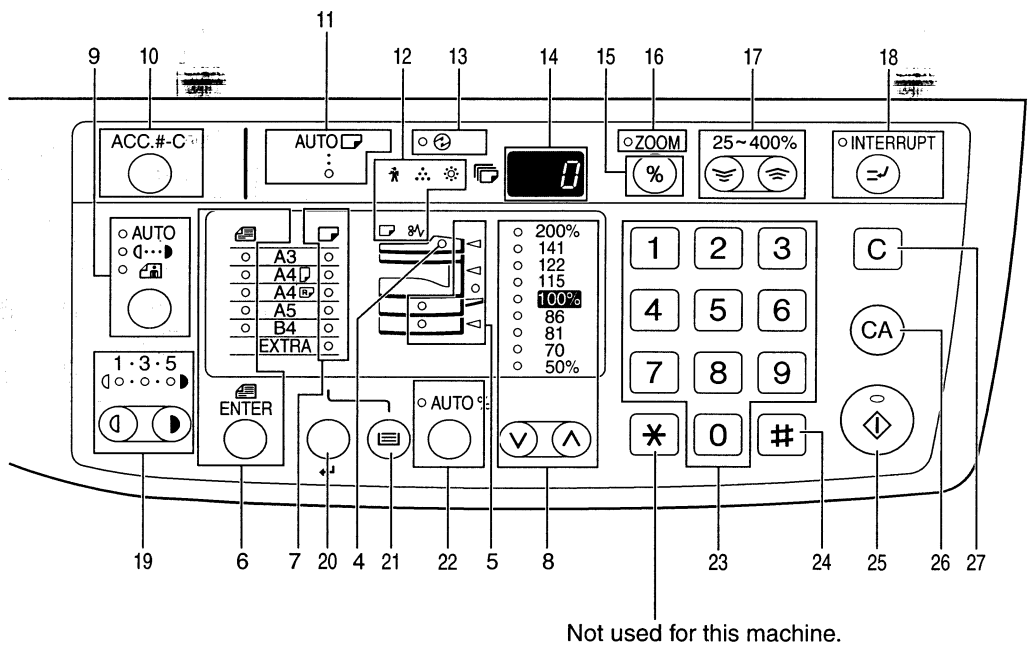


17	Document feeder tray (when the SPF is installed)	18	Original guides (when the SPF is installed)	19	Feeding roller cover (when the SPF is installed)
20	Right side cover (when the SPF is installed)	21	Exit area (when the SPF is installed)	22	Toner cartridge lock release lever
23	Toner cartridge	24	Roller rotating knob	25	Fusing unit release levers
26	Photoconductive drum	27	Fusing unit paper guide		

3. Operation Section

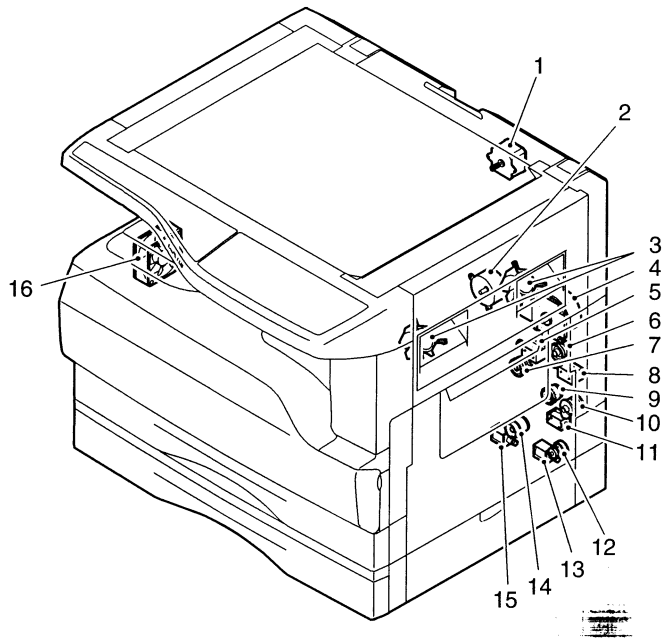


1	ON LINE key/indicator	2	DUAL PAGE COPY key/indicator	3	XY-ZOOM key/indicator



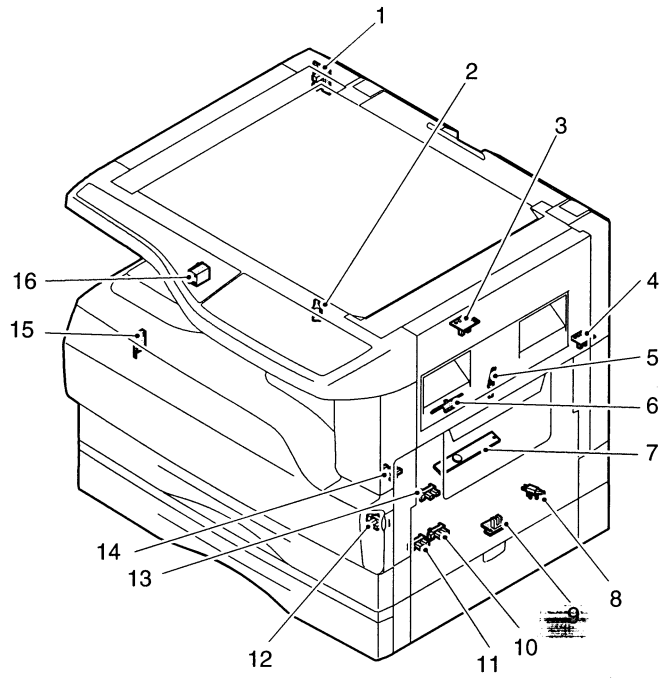
4	SPF indicator (when the SPF is installed)	5	Paper feed location / misfeed location indicators	6	ORIGINAL SIZE ENTER key / ORIGINAL SIZE indicators
7	PAPER SIZE indicators	8	PRESET RATIO selector keys / indicators	9	AUTO/TEXT/PHOTO key / indicators
10	AUDIT CLEAR key	11	AUTO PAPER SELECT indicator	12	Alarm indicators
13	POWER SAVE indicator	14	Display	15	Copy ratio display key
16	ZOOM indicator	17	Zoom keys	18	INTERRUPT key / indicator
19	Light and Dark keys / indicators	20	PAPER SIZE ENTER key	21	TRAY SELECT key
22	AUTO IMAGE key / indicator	23	Numeric keys	24	# key
25	START key / indicator	26	CLEAR ALL key	27	CLEAR key

4. Motor, solenoid, clutch



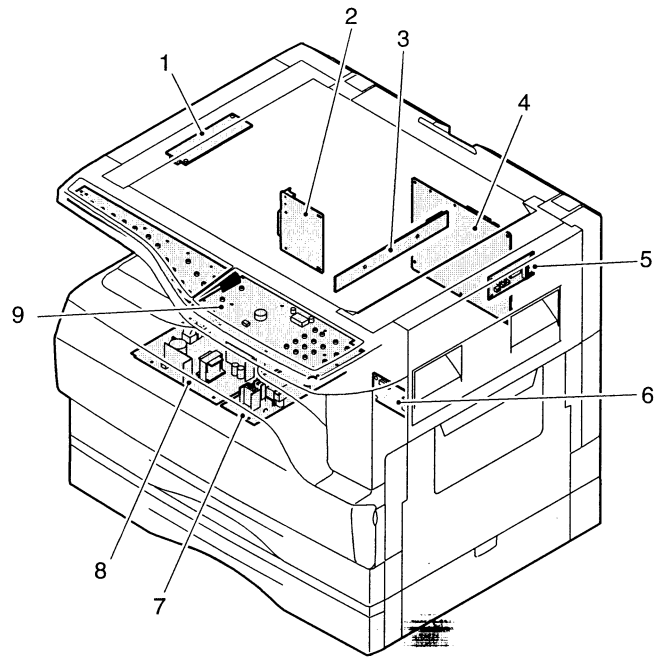
No.	Name	Code	Function operation
1	Mirror motor	MRM	Drives the optical mirror base (scanner unit).
2	Toner motor	TM	Toner supply
3	Cooling fan motor	CFM	Cools the inside of the machine.
4	Main motor	MM	Drives the machine.
5	1st tray paper feed clutch	CPFC1	Drive the pick up roller
6	PS clutch	RRC	Drives the resist roller
7	Paper feed solenoid	CPSOL1	Solenoid for paper feed from cassette
8	Resist roller solenoid	RRS	Resist roller rotation control solenoid
9	Manual paper transport clutch	MPTC	Drives the manual paper transport roller.
10	Manual paper feed clutch	MPFC	Drives the manual paper feed roller.
11	Manual paper feed solenoid	MPFS	Manual paper feed solenoid
12	2nd tray transport clutch	CPFC2	Drives the 2nd tray transport roller.
13	2nd tray transport solenoid	FSOL1	2nd tray transport solenoid
14	2nd tray paper feed clutch	CPFC1	Drives the 2nd tray paper feed roller.
15	2nd tray paper feed solenoid	PSOL2	2nd tray transport solenoid
16	Exhaust fan motor	VFM	Cools the inside of the machine.

5. Sensor, switch



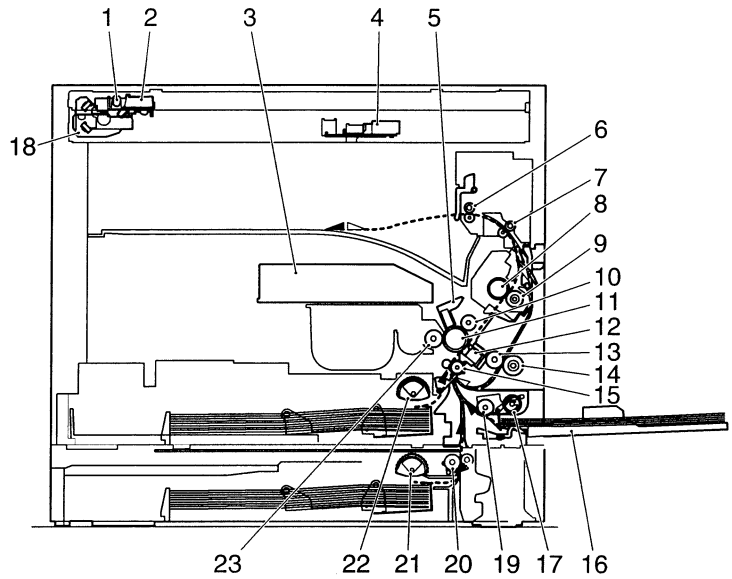
No.	Name	Code	Function operation
1	Mirror home position sensor	MHPS	Detects the mirror (scanner unit) home position.
2	Side door switch	DSWR	Side door open detection
3	Paper exit sensor (paper exit side)	POD1	Detects paper exit.
4	Paper exit sensor	PDPX	Paper transport detection
5	Thermistor	RTH	Fusing section temperature detection
6	Thermostat		Fusing section abnormally high temperature detection
7	Toner density sensor	TCS	Toner quantity detection
8	2nd tray detection switch		2nd tray detection
9	Manual sensor	MPED	Manual transport detection
10	2nd tray door open/close sensor	DRS2	2nd tray door open/close detection
11	2nd tray door paper pass sensor	PPD2	2nd tray paper entry detection
12	2nd tray paper empty sensor	CSS2	2nd tray paper empty detection
13	Paper in sensor	PIN	Paper transport detection
14	Cassette empty		Tray paper entry detection
15	Front cover SW		Front cover open detection
16	Power switch	MAIN SW	Turns ON/OFF the main power source.

6. PWB unit



No.	Name	Function operation
1	Copy lamp Inverter PWB	Copy lamp control
2	I / F PWB	USB1.1, IEEE1284 I/F
3	CCD sensor PWB	Image scanning
4	Main control PWB	Main control PWB
5	Tray PWB	Shifter motor control
6	2nd cassette PWB	2nd cassette control
7	High voltage PWB	High voltage control
8	Power PWB	AC power input/DC power control
9	Operation main PWB	Operation panel input/Display, operation panel section control

7. Cross sectional view



No.	Name	Function/Operation
1	Copy lamp	Image radiation lamp
2	Copy lamp unit	Operates in synchronization with No. 2/3 mirror unit to radiate documents sequentially.
3	LSU unit	Converts image signals into laser beams to write on the drum.
4	Lens unit	Reads images with the lens and the CCD.
5	MC holder unit	Supplies negative charges evenly on the drum.
6	Paper exit roller	Used to discharge paper.
7	Transport roller	Used to transport paper.
8	Upper heat roller	Fuses toner on paper (with the teflon roller).
9	Lower heat roller	Fuses toner on paper (with the silicon rubber roller).
10	Waste toner transport roller	Transports waste toner to the waste toner box.
11	Drum unit	Forms images.
12	Transfer charger unit	Transfer images (on the drum) onto paper.
13	DUP follower roller	
14	Duplex transport roller	Transports paper for duplex .
15	Resist roller	Takes synchronization between the paper lead edge and the image lead edge.
16	Manual paper feed tray	Manual paper feed tray
17	Manual paper pick up roller	Picks up paper in manual paper feed.
18	No. 2/3 mirror unit	Reflects the images from the copy lamp unit to the lens unit.
19	Manual transport roller	Transports paper from the manual paper feed port.
20	2nd tray paper transport roller	Transports paper from the 2nd tray.
21	2nd tray paper pick up roller (semi-circular roller)	Picks up paper from the 2nd tray.
22	1st tray paper feed roller (semi-circular roller)	Picks up paper from the 1st tray.
23	MG roller	Puts toner on the OPC drum.

[5]UNPACKING AND INSTALLATION

1.Installing conditions

A.Copier installation

Do not install your copier in areas that are:
•damp, humid, or very dusty
•exposed to direct sunlight
•poorly ventilated
•subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.
•Be sure to allow the required space around the machine for servicing and proper ventilation.

B.Power source

•Use an exclusive-use power outlet. If the power plug of this machine is inserted into a power outlet commonly used with other illumination units, flickers of the lamp may be result. Use a power outlet which is not used commonly with any illumination units.
•Avoid complex wiring.

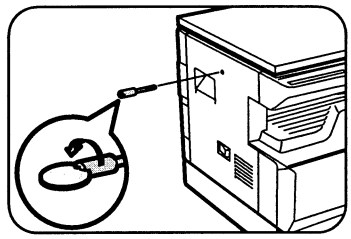
C.Grounding wire connection.

•To avoid danger, be sure to connect a grounding wire. If no grounding wire is connected and a leakage occurs, a fire or an electric shock may be result.

2.Removal of protective material and fixing screw

1) Remove all tapes and protective material.
•Remove all tapes, then open the document cover and remove the protective material of sheet shape

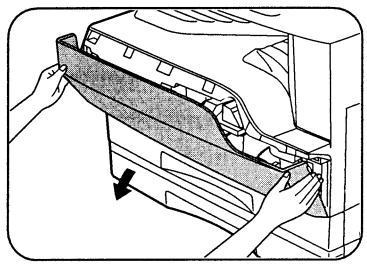
2) Remove the fixing screw.
•Use a coin to remove the fixing screw.
•The fixing screw is required when transporting the machine. Keep it in the tray. (Refer to the later description.)



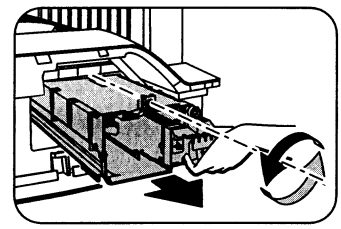
3.Installing procedure

A.Developer cartridge installation

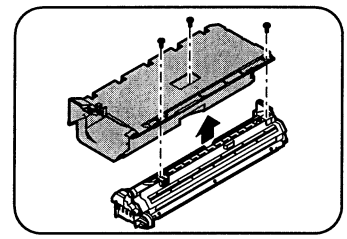
1) Open the front cover.
•Pull on the top center of the front cover to open.



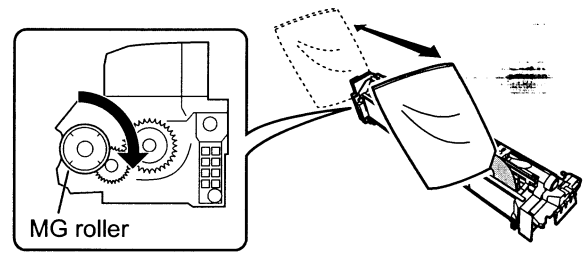
2) Loosen the screw and remove the developer cartridge.



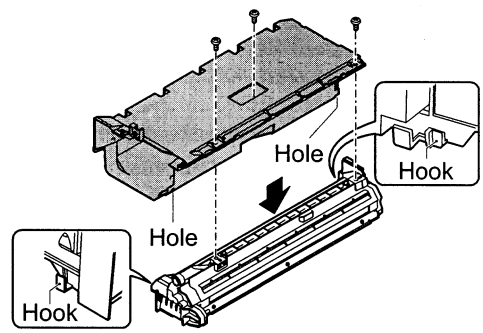
3) Remove the developer tank from the developer cartridge.



4) Supply developer into the developer tank while rotating the MG roller in the arrow direction.



* Shake the developer bag enough before opening it.



Note: Check that the DV seal is free from developing agent. If developing agent is attached to the DV seal, clean it carefully.
Check to insure that the hook is engaged in two positions.

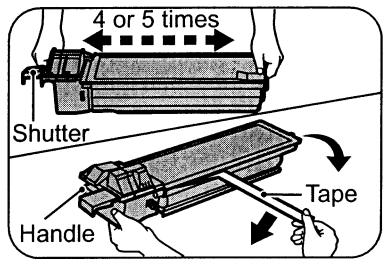
5) Attach the developer tank to the developer cartridge.
* After supplying developer into the developer cartridge, do not tilt or shake the developer cartridge.
6) Attach the developer cartridge to the copier, and fix it with the screw.

B.Toner cartridge installation

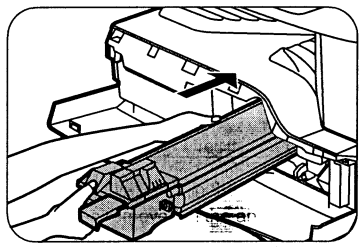
1) Shake the toner cartridge several times horizontally, and remove the tape.

* Do not hold the shutter lever when shaking.

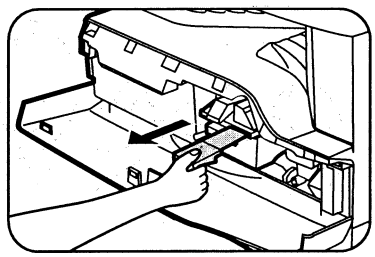
* After removing the tape, do not tilt or shake the toner cartridge.



2) Attach the toner cartridge to the copier.



3) Pull the shutter lever.

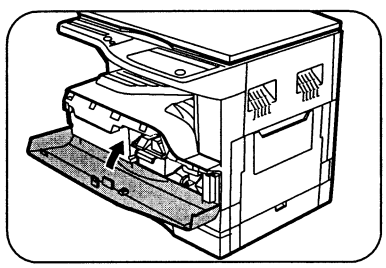


Close the front cover A, then close the side cover B.

•When closing the front cover, gently press the both sides.

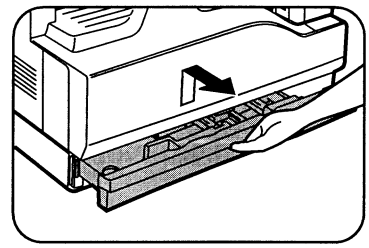
•When closing the side cover, hold the knob.

•When closing the covers, be sure to close the front cover first, then close the side cover. If closed in a wrong sequence, the covers may be broken.

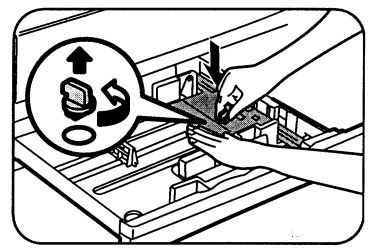


4.Removal and storage of fixing screw

1) Lift the knob and gently pull out the tray.



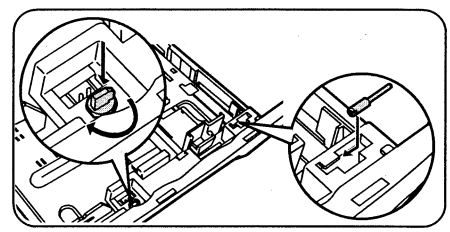
2) Hold the paper pressure plate and turn the fixing screw in the arrow direction.



3) Store the fixing pin and the fixing screw in the tray.

•Store the fixing screw which was removed in the above procedure 2 and the fixing screw which was removed in procedure 2 of 2.

•Removal of protective material and fixing screw in the storage place in the tray.

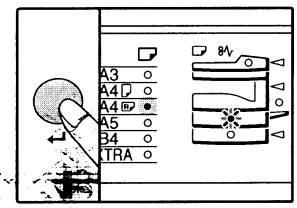


5. Changing a tray's paper size setting

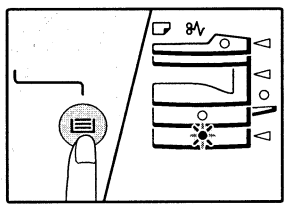
Follow these steps to change a tray's paper size setting.

Note:
- The paper size setting cannot be changed when the machine has stopped temporarily due to running out of paper or a misfeed, or during interrupt copying.
- During printing (even in copy mode), the paper size setting cannot be changed.
- A5 (5-1/2" x 8-1/2") size paper can only be selected in upper paper tray.
- Do not load paper that is a different size than the paper size setting. Copying will not be possible.

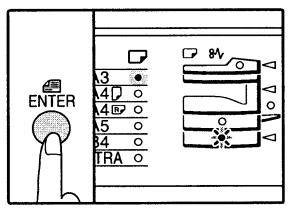
1) Hold down the [PAPER SIZE ENTER] key for more than 5 seconds to set the selected paper size.
   The currently selected paper feed location indicator will blink and the corresponding paper size (which is currently set) indicator will light steadily.
   All other indicators will go out.



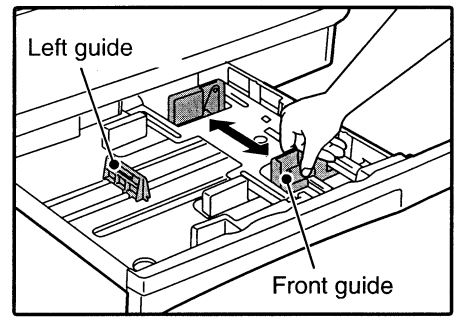
2) If the machine has two paper trays, use the [TRAY SELECT] key to select the paper tray for which you wish to change the paper size setting.
   Each time the [TRAY SELECT] key is pressed, a paper tray will be indicated with a blinking paper feed location indicator.



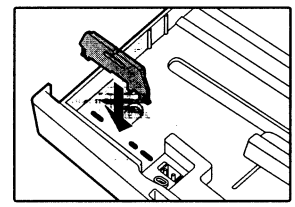
3) Use the [ORIGINAL SIZE ENTER] key to select the paper size.
   The indicator of the selected paper size lights up.



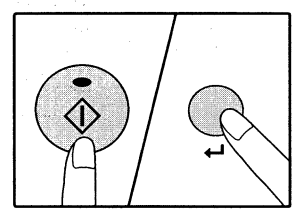
4) Squeeze the lock lever of the front guide and slide the front guide to match the width of the paper, and move the left guide to the appropriate slot as marked on the tray.



- The front guide is a slide-type guide. Grasp the locking knob on the guide and slide the guide to the indicator line of the paper to be loaded.
- The left guide is an insert-type guide. Remove it and then insert it at the indicator line of the paper to be loaded.
- When using 11" x 17" sized paper store the left guide in the slot at the left front of the paper tray.



5) Press the [START] key and then the [PAPER SIZE ENTER] key.
   To change the paper size setting of another tray, repeat steps 2) to 5) after pressing the [START] key.



Note: Affix the paper size label for the paper size selected in step 3) to the label position on the right end of the tray.

Important points when using the printer mode

- Make sure that the tray's paper size setting is the same as the tray's paper size setting in the printer driver. For example, if the tray's paper size setting is A4R, set "Setting Paper Size" to "A4-R". For more information, see "CONFIGURING THE PRINTER DRIVER" in the "Software Setup Guide".

[6]ADJUSTMENTS

1.Adjustment item list

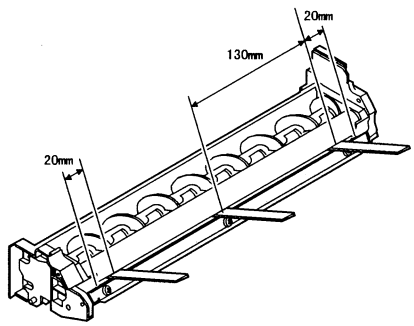
Section		Adjustment item		Adjustment procedure/SIM No.
A	Process section	(1)	Developing doctor gap adjustment	Developing doctor gap adjustment
		(2)	MG roller main pole position adjustment	MG roller main pole position adjustment
		(3)	Developing bias voltage check	
		(4)	Main charger voltage check	
B	Mechanism section	(1)	Image position adjustment	SIM-50
		(2)	Main scanning direction (FR direction) distortion balance adjustment	No. 2/3 mirror base unit installing position adjustment
				Copy lamp unit installing position adjustment
		(3)	Main scanning direction (FR direction) distortion adjustment	Rail height adjustment
		(4)	Sub scanning direction (scanning direction) distortion adjustment	Winding pulley position adjustment
		(5)	Main scanning direction (FR direction) magnification ratio adjustment	SIM 48-1
		(6)	Sub scanning direction (scanning direction) magnification ratio adjustment	OC mode in copying (SIM 48-1)
				SPF mode in copying (SIM 48-5)
		(7)	Off center adjustment	OC mode (SIM 50-12)
				SPF mode (SIM 50-12)
		(8)	SPF white correction pixel position adjustment (required in an SPF model when replacing the lens unit)	SIM63-7
C	Image density adjustment	(1)	Copy mode	SIM 46-1

2.Copier adjustment

A.Process section

(1) Developing doctor gap adjustment

1) Loosen the developing doctor fixing screw A.
2) Insert a thickness gauge of 1.5mm to the three positions at 20mm and 130mm from the both ends of the developing doctor as shown.



3) Push the developing doctor in the arrow direction, and tighten the developing doctor fixing screw. (Perform the same procedure for the front and the rear frames.)
4) Check the clearance of the developing doctor. If it is within the specified range, then fix the doctor fixing screw with screw lock.

* When inserting a thickness gauge, be careful not to scratch the developing doctor and the MG roller.

<Adjustment specification>

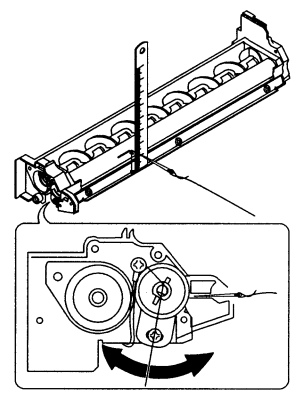
Developing doctor gap

Both ends (20mm from the both ends) : $1.5^{+0.1}_{-0.15}$ mm

C (Center) (150mm from the both ends) :$1.55^{+0.15}_{-0.2}$ mm

(2) MG roller main pole position adjustment

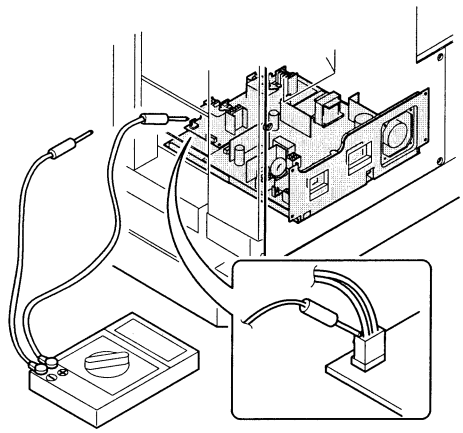
1) Remove and separate the waste toner box and put the developing unit on a flat surface.
2) Tie a string to a needle or a pin.
3) Hold the string and bring the needle close to the MG roller horizontally. (Do not use paper clip, which is too heavy to make a correct adjustment.) (Put the developing unit horizontally for this adjustment.)
4) Do not bring the needle into contact with the MG roller, but bring it to a position 2 or 3mm apart from the MG roller. Mark the point on the MG roller which is on the extension line from the needle tip.
5) Measure the distance from the marking position to the top of the doctor plate of the developing unit to insure that it is 18mm.
   If the distance is not within the specified range, loosen the fixing screw A of the main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



(3)Developing bias voltage check

Note: Use a digital multi-meter with an internal resistance of 10MΩ or more.

1) Set the digital multi-meter range to DC700V.
2) Put the test rod of the digital multi-meter on the developing bias voltage output check pin.
3) Turn on the power, execute SIM25-1.



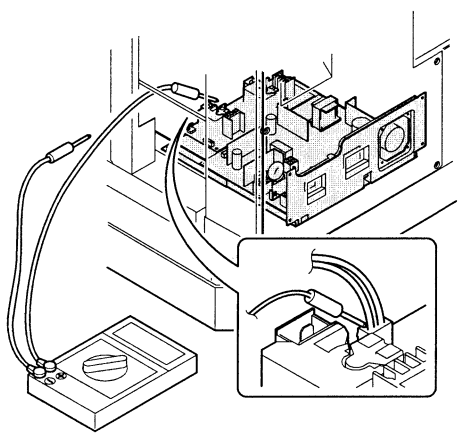
<Specification>

Mode	Specification
Developing bias voltage	DC - 400±8V

(4) Grid bias voltage check

Note: Use a digital multi-meter with an internal resistance of 10MΩ or more.

1) Set the digital multi-meter range to DC700V.
2) Put the test rod of the digital multi-meter on the grid bias voltage output check pin.
3) Turn on the power.
   (The voltage is outputted in the grid bias High output mode during warming up, and in the grid bias Low output mode when warming up is completed.)



<Specification>

Mode	Specification
Grid bias LOW	DC - 400±8V
Grid bias HIGH	DC - 525±10V

B.Mechanism section

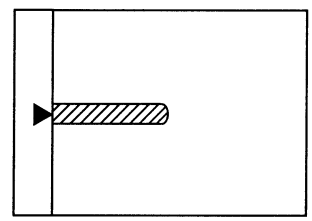
Note: If a jam error or paper empty occurs during copying in the adjustment by the simulation, the image data are not saved, and therefore recopying is required.

(1)Image position adjustment

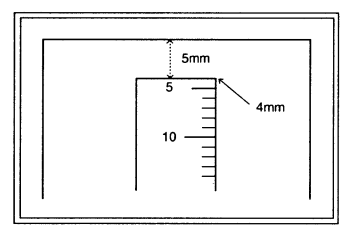
a.OC image lead edge position adjustment (SIM 50-1)

Note: In advance to this adjustment, the sub scanning magnification ratio adjustment must be performed.

1) Set a scale on the OC table as shown below.



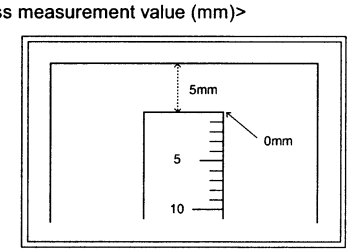
2) Make a copy.
3) Check the copy output. If necessary, perform the following adjustment procedures.
4) Execute SIM 50-1.
5) Set the OC lead edge position set value (Exposure display <<PHOTO>> ON) to [1]
   The OC image scanning start position is shifted inside the document edge.
6) Set the main cassette lead edge void adjustment value (Exposure display <<TEXT>> ON) * to [1]
   The lead edge void becomes the minimum.
7) Set the main cassette print start position value (Exposure display <<AUTO+MAIN CASSETTE LAMP>> ON) to [1] and make a copy.
   The print start position is shifted inside the document edge.



*The dimension varies depending on the model.

8) Measure the image loss R of the copied image. Enter the set value of the image scanning lead edge position (Exposure display <<PHOTO>> ON) again.

•1 step of the set value corresponds to about 0.1mm shift.
•Calculate the set value from the formula below.
R/0.1(mm) = Image loss set value
<R: Image loss measurement value (mm)>



* The scanning edge is set.
(A line may be printed by scanning the document edge.)

Example: 4/0.1 = 40 = about 40

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

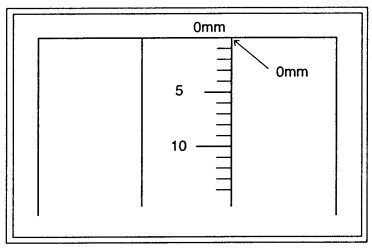
9) Measure the distance H between the paper lead edge and the image print start position. Set the image print start position set value (Exposure display <<AUTO+MAIN CASSETTE LAMP>> ON) again.

•1 step of the set value corresponds to about 0.1mm shift.

•Calculate the set value from the formula below.

H/0.1(mm) = Image print start position set value

<H: Print start position measurement value (mm)>



*Fit the print edge with the paper edge, and perform the lead edge adjustment.

Example: 5/0.1 = 50 = about 50

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

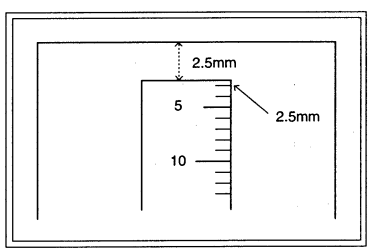
10) Set the lead edge void adjustment value (Exposure display <<TEXT>> ON)* again.

•1 step of the set value corresponds to about 0.1mm shift.

•Calculate the set value from the formula below.

B/0.05 (mm) = Lead edge void adjustment value

<B: Lead edge void (mm)>



Example: When setting the lead edge void to 2.5mm
:2.5 /0.05 = about 50

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

* 2nd cassette lead edge void adjustment: Exposure display <<AUTO + TEXT + PHOTO>>
Multi bypass tray lead edge void adjustment: Exposure display <<TEXT + PHOTO>>

<Duplex mode adjustment>

OC 2nd print surface (Auto duplex) lead edge position adjustment: SIM50-19 <<PHOTO>>

* For the adjustment procedure, set to S → D mode before execution.

Note: Before performing the 2nd print surface lead edge position adjustment and the lead edge void adjustment, be sure to perform the 1st print surface lead edge position adjustment in advance, and be sure to perform the 2nd print surface lead edge position adjustment and then the lead edge void adjustment in this sequence.

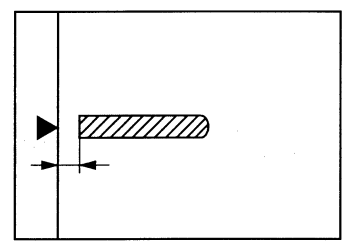
<Adjustment specification>

Adjustment mode	SIM	LED	Set value	Spec value	Set range
OC image lead edge position	SIM 50-1	PHOTO	R/0.1	Lead edge void: 1 - 4mm Image loss: 3mm or less	1 ~ 99
Main cassette print start position		AUTO + MAIN	B/0.1		
2nd cassette print start position		AUTO + 2nd CASSETTE			
Multi bypass tray print start position		AUTO + MULTI			
Lead edge void		TEXT	B/0.05		
OC 2nd print surface lead edge position adjustment	SIM 50-19*	PHOTO	1 step: 0.1mm shift		

* (Set to S → D mode for before execution)

b.SPF image lead edge position adjustment (SIM50-6)

1) Set a scale on the OC table as shown below.



Note: Since the printed copy is used as a test chart, put the scale in paralled with the edge lines.

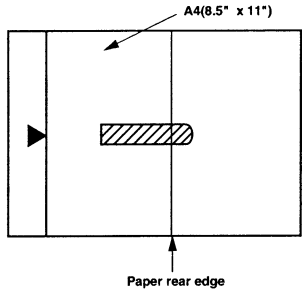
2) Make a copy, Then use the copy output as an original to make an SPF copy again.
3) Check the copy output. If necessary, perform the following adjustment procedures.
4) Execute SIM 50-6.
5) Set the SPF lead edge position set value (Exposure display <<AUTO>> ON) so that the same image is obtained as that obtained in the previous OC image lead edge position adjustment.

<Adjustment specification>

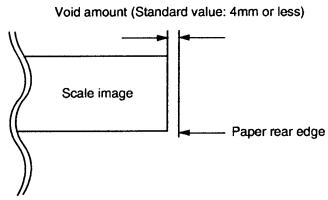
Adjustment mode	SIM	LED	Set value	Spec value	Set range
SPF image lead edge position (1st print surface)	SIM 50-6	AUTO	1 step: 0.1mm shift	Lead edge void: 1 - 4mm Image loss: 3mm or less	1 ~ 99
(2nd print surface)		TEXT			

c.Rear edge void adjustment (SIM50-1, SIM50-19)

1) Set a scale as shown in the figure below.



2) Set the document size to A4 (8.5" x 11"), and make a copy at 100%.
3) If necessary, perform the following adjustment procedure.



4) Execute SIM 50-1 and set the density mode to AUTO + TEXT + PHOTO (Rear edge void).The currently set adjustment value is displayed.
5) Enter the set value and press the start key. The correction value is stored and a copy is made.

<Duplex mode adjustment>

* 1st print surface (auto duplex) rear edge void adjustment: SIM50-19 <<AUTO>>
* 2nd print surface (auto duplex) rear edge void adjustment: SIM50-19<<TEXT>>
* Set to S → D mode before execution.

Note: Before performing the 2nd print surface rear edge void adjustment, be sure to perform the 2nd print surface lead edge position adjustment. Never reverse the sequence.

<Adjustment specification>

Mode	SIM	LED	Set value	Specifi-cation	Set range
Rear edge void	SIM 50-1	AUTO + TEXT + PHOTO	1 step: 0.1mm shift	4mm or less	1 ~ 99

d. Paper off center adjustment (SIM50-10)

1) Set a test chart on the document table.
2) Select a paper feed port and make a copy. Compare the copy and the test chart. If necessary, perform the following adjustment procedure.
3) Execute SIM 50-10. After completion of warm-up, shading is performed and the currently set off center adjustment value of each paper feed port is displayed.
4) Enter the set value and press the start key. The correction value is stored and a copy is made.

e.Side edge void area adjustment (SIM26-43)

Note: Before performing this adjustment, be sure to check that the paper off center adjustment (SIM 50-10) is completed.

1) Set a test chart on the document table.
2) Select a paper feed port and make two copies. Compare the 2nd copy and the test chart. If necessary, perform the following adjustment procedure.
* The 1st copy does not show the void. Be sure to check the 2nd copy.
3) Execute SIM 26-43 and set the density mode to AUTO(right edge void) + TEXT (Left edge void).
The currently set adjustment value is displayed.
4) Enter the set value and press the start key. The correction value is stored.

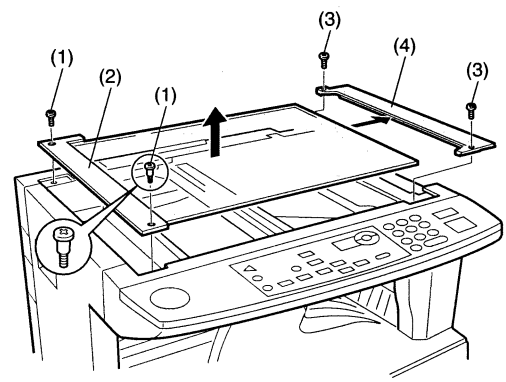
<Adjustment specification>

ode	SIM	LED	Set value	Specifi-cation	Set range
Left edge void	SIM 26-43	AUTO (right edge) + TEXT (left edge)	1 step: 0.5mm shift	0.5 ~ 4mm	1 ~ 99

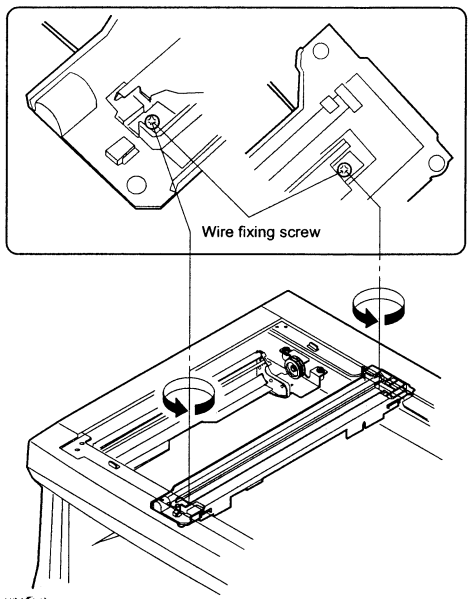
* The void adjustment values on the right and the left must be the same.

(2) Main scanning direction(FR direction) distortion balance adjustment

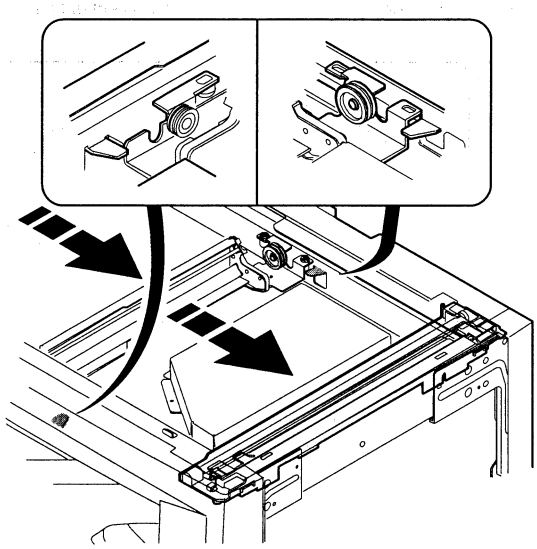
1) Remove the OC glass and the right cabinet.



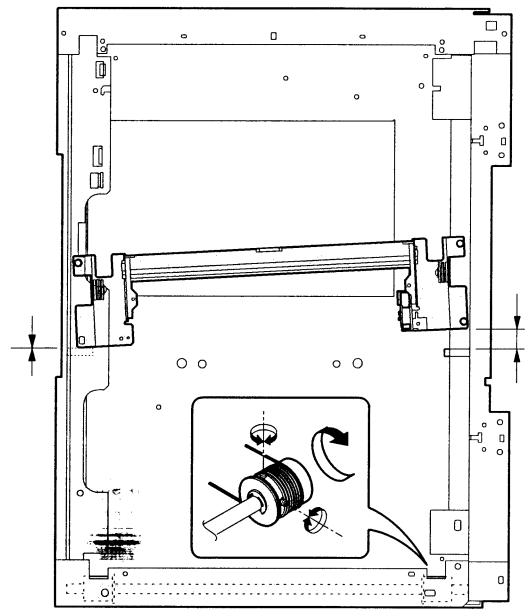
2) Loosen the copy lamp unit wire fixing screw.



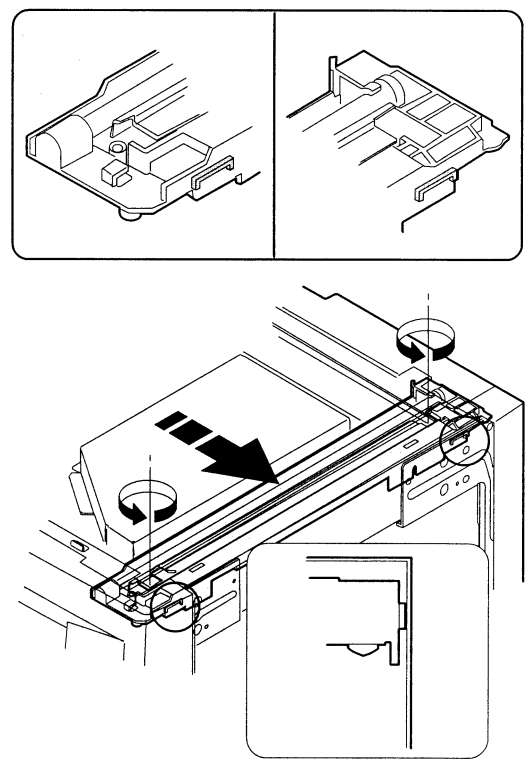
3) Manually turn the mirror base drive pulley and bring No. 2/3 mirror base unit into contact with the positioning plate. At that time, if the front frame side and the rear frame side of No. 2/3 mirror base unit are brought into contact with the positioning plate at the same time, the mirror base unit parallelism is proper. If one of them is in contact with the positioning plate, perform the adjustment of 4).



4) Loosen the set screw of the scanner drive pulley which is not in contact with No. 2/3 mirror base unit positioning plate.
5) Without moving the scanner drive pulley shaft, manually turn the scanner drive pulley until the positioning plate is brought into contact with No. 2/3 mirror base unit, then fix the scanner drive pulley.

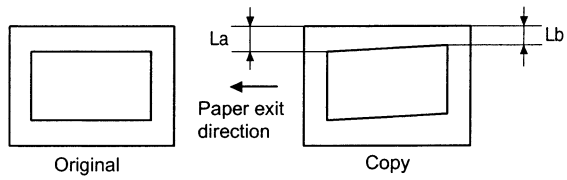


6) Put No. 2/3 mirror base unit on the positioning plate again, push the projections on the front frame side and the rear frame side of the copy lamp unit to the corner frame, and tighten the wire fixing screw.

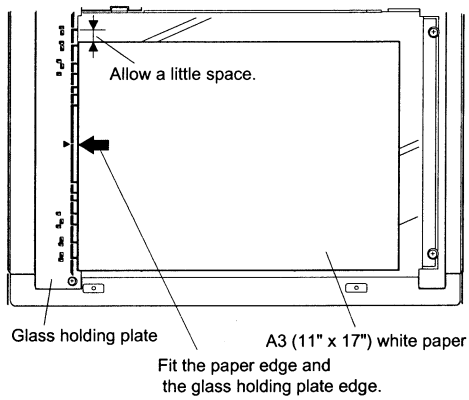


(3)Main scanning direction (FR direction) distortion adjustment

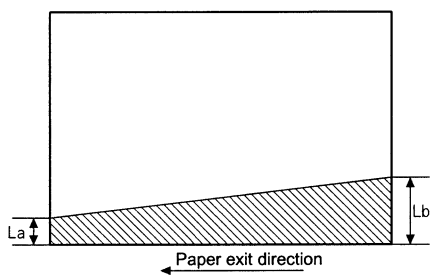
This adjustment must be performed in the following cases:
•When the mirror base drive wire is replaced.
•When the lamp unit, or No. 2/3 mirror holder is replaced.
•When a copy as shown is made.



1) Set A3 (11" x 17") white paper on the original table as shown below.



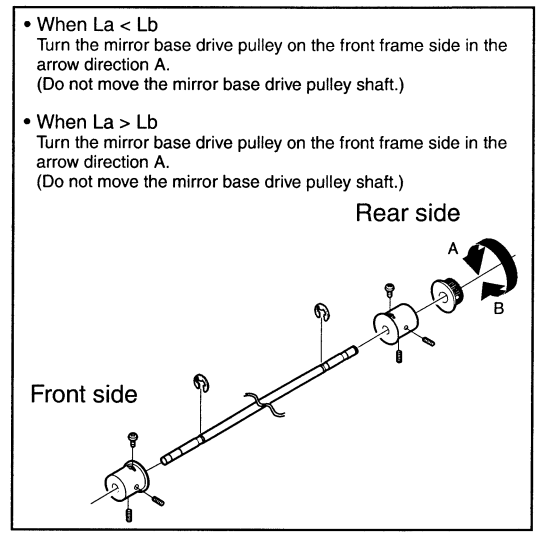
2) Open the original cover and make a normal (100%) copy.
3) Measure the width of the black background at the lead edge and at the rear edge.



La: Lead edge black background width
Lb: Rear edge black background width

If the width (La) of the black background at the lead edge is equal that (Lb) at the rear edge, there is no need to execute the following procedures of 4) ~ 7).

4) Loosen the mirror base drive pulley fixing screw on the front frame side or on the rear frame side.



5)Tighten the mirror base drive pulley fixing screw.

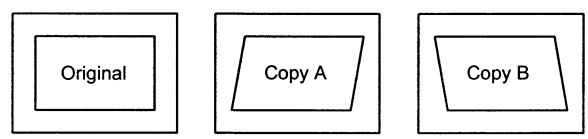
<Adjustment specification>

La = Lb

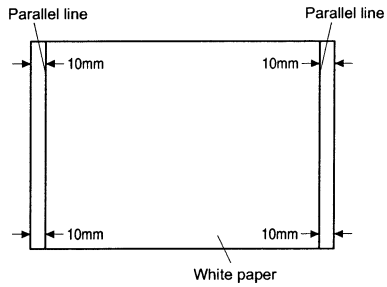
6) Execute the main scanning direction (FR) distartion balance adjustment previously described in 2) again.

(4) Sub scanning direction (scanning direction) distortion adjustment

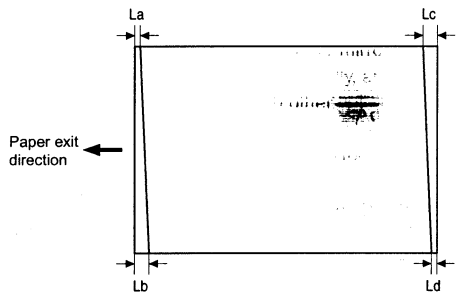
When there is no skew copy in the mirror base scanning direction and there is no horizontal error (right angle to the scanning direction), the adjustment can be made by adjusting the No. 2/3 mirror base unit rail height.
Before performing this adjustment, be sure to perform the horizontal image distortion adjustment in the laser scanner section.
This adjustment must be performed in the following cases:
•When the mirror base wire is replaced.
•When the copy lamp unit or No. 2/3 mirror unit is replaced.
•When the mirror unit rail is replaced or moved.
•When a following copy is made.



1) Making of a test sheet
Make test sheet by drawing parallel lines at 10mm from the both ends of A3 (11" x 17") white paper as shown below. (These lines must be correctly parallel to each other.)

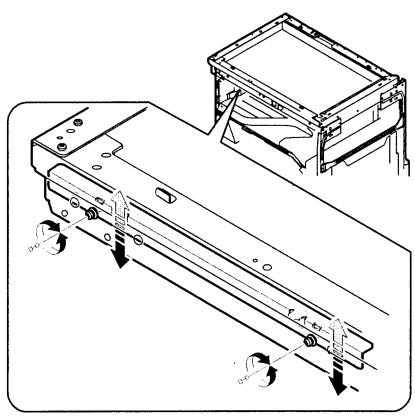


2) Make a normal (100%) copy of the test sheet on A3 (11" x 17") paper. (Fit the paper edge with the glass holding plate edge.)
3) Measure the distances (La, Lb, Lc, Ld) at the four corners as shown below.



When La = Lb and Lc = Ld, no need to perform the procedures 4) and 5).

4) Move the mirror base F rail position up and down (in the arrow direction) to adjust.



Note: If the rear side rail is used for the adjustment, the scanning position of the white balance sheet is shifted and "E7-04" may occur only when scanning with the SPF. Therefore it is advisable to use the front side rail for the adjustment.

- When La > Lb
  Shift the mirror base B rail upward by the half of the difference of La - Lb.
- When La < Lb
  Shift the mirror base B rail downward by the half of the difference of Lb - La.
  Example: When La = 12mm and Lb = 9mm, shift the mirror base B rail upward by 1.5mm.
- When Lc > Ld
  Shift the mirror base B rail downward by the half of the difference of Lc - Ld.
- When Lc < Ld
  Shift the mirror base B rail downward by the half of the difference of Ld - Lc.

* When moving the mirror base rail, hold the mirror base rail with your hand.

<Adjustment specification>

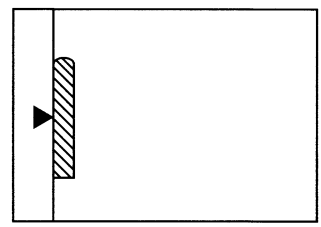
La = Lb, Lc = Ld

5) After completion of adjustment, manually turn the mirror base drive pulley, scan the mirror base A and mirror base B fully, and check that the mirror bases are not in contact with each other.
* If the mirror base rail is moved extremely, the mirror base may be in contact with the frame or the original glass. Be careful to avoid this.

(5) Main scanning direction (FR direction) magnification ratio adjustment (SIM 48-1)

Note: Before performing this adjustment, be sure to check that the CCD unit is properly installed.

1) Put a scale on the original table as shown below.



2) Execute SIM 48-1.
3) After warm-up, shading is performed and the current set value of the main scanning direction magnification ratio is displayed on the display section in 2 digits.
4) Select the mode and press the start key again.
5) Manual correction mode (TEXT lamp ON)
Enter the set value and press the start key.
The set value is stored and a copy is made.

<Adjustment specification>

Note: A judgment must be made with 200mm width, and must not be made with 100mm width.

Mode	Specification	SIM	Set value	Set range
Main scanning direction magnification ratio	At normal: ±1.0%	SIM 48-1	Add 1:0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

(6) Sub scanning direction (scanning direction) magnification ratio adjustment (SIM 48-1, SIM 48-5)

a. OC mode in copying (SIM48-1)

Note: Before performing this adjustment, be sure to check that the CCD unit is properly installed.

1) Put a scale on the original table as shown below, and make a normal (100%) copy.
2) Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
3) Execute SIM 48-1.<<PHOTO>>
4) After warm-up, shading is performed and the current set value of the main scanning direction magnification ratio is displayed on the display section in 2 digits.
5) When the photo lamp is lighted by pressing the density selection key, the current magnification ratio correction value in the sub scanning direction is displayed in lower 2 digits of the display section.
6) Enter the set value and press the start key.
   The set value is stored and a copy is made.

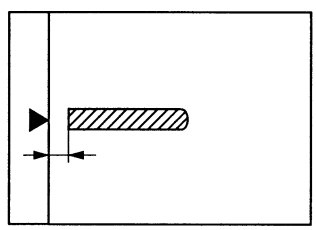
<Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (OC mode)	Normal ±1.0%	SIM 48-1 (PHOTO)	Add 1:0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

b. SPF sub scanning direction magnification ratio (SIM48-5)

Note:
- Before performing this adjustment, be sure to check that the CCD unit is properly installed.
- Before performing this adjustment, the OC mode adjustment in copying must be completed.

1) Put a scale on the original table as shown below, and make a normal (100%) copy to make a test chart.



Note: Since the printed copy is used as a test chart, put the scale in parallel with the edge lines.

2) Set the test chart on the SPF and make a normal (100%) copy.
3) Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
4) Execute SIM 48-5.
5) After warm-up, shading is performed.
   The auto density lamp lights up and the current front surface sub scanning direction magnification ratio correction value is displayed in two digits on the display section.
6) Enter the set value and press the start key.
   The set value is stored and a copy is made.
7) Change the mode from the duplex original mode to the simplex original mode.
   "MANUAL" lamp lights up and the current back surface sub scanning direction magnification ratio is displayed in two digits on the display section.
8) Enter the set value and press the start key.
   The set value is stored and a copy is made.

<Adjustment specification>

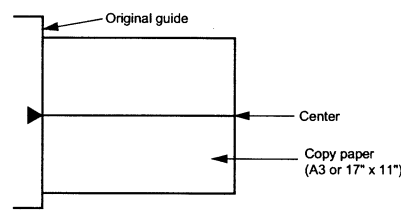
Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (SPF mode)	Normal ±1.0%	SIM 48-5	Add 1:0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

(7) Off center adjustment (SIM 50-12)

a. OC mode (SIM50-12)

1) Make a test chart as shown below and set it so that its center line is fit with the original guide center mark.

* To make a test chart, draw a line on A3 or 11" x 17" paper at the center in the paper transport direction.



2) Make a normal copy from the manual paper feed tray, and compare the copy and the test chart.
   If necessary, perform the following adjustment procedures.
3) Execute SIM 50-12.
4) After warm-up, shading is performed and the current set value of the off center adjustment is displayed on the display section in 2 digits.
5) Enter the set value and press the start key.
   The set value is stored and a copy is made.

<Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Original off center mode (OC mode)	Single: Center ±2.0mm	SIM 50-12 (AE lamp ON)	Add 1: 0.1mm shift to R side Reduce 1: 0.1mm shift to L side	1 ~ 99

b. SPF original off-center adjustment (SIM50-12)

Note:Before performing this adjustment, be sure to check that the paper off center is properly adjusted.

1) Make a test chart for the center position adjustment and set it on the SPF.

<Adjustment specification>

Draw a line on a paper in the scanning direction.

2) Make a normal copy from the manual paper feed tray, and compare the copy and the original test chart.
   If necessary, perform the following adjustment procedures.
3) Execute SIM 50-12.
4) After warm-up, shading is performed and the current set value of the off center adjustment at each paper feed port is displayed on the display section in 2 digits.
5) Enter the set value and press the start key.
   The set value is stored and a copy is made.

<Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Original off center mode (SPF mode)	Single: Center ±3.0mm(TEXT lamp)	SIM 50-12	Add 1: 0.1mm shift to R side Reduce 1: 0.1mm shift to L side	1 ~ 99
	Duplex: Center ±3.5mm(PHOTO lamp)			

(8) SPF white correction pixel position adjustment(SIM63-7) (required in an SPF model when replacing the lens unit)

1) Fully open the SPF.
2) Execute SIM 63-7.
3) When the operation panel displays "COMPLETE,"the adjustment is completed.
4) If the operation panel displays "ERROR,"perform the following measures.

•When the display is 0:

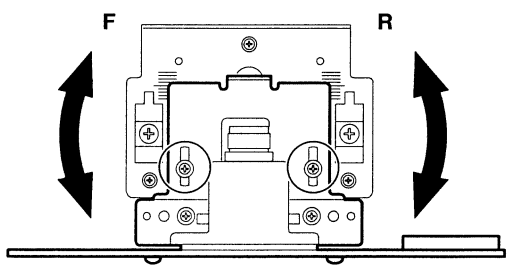
Check that the SPF is open.
Check that the lamp is ON.(If the lamp is OFF,check the MCU connector.)
Check that the CCD harness is properly inserted into the MCU connector.

•When the display is 281 or above:

1) Remove the table glass.
2) Remove the dark box.
3) Slide the lens unit toward the front side and attach it,then execute SIM.

•When the display is 143 or below:

1) Remove the table glass.
2) Remove the dark box.
3) Slide the lens unit toward the rear side and attach it,then execute SIM.



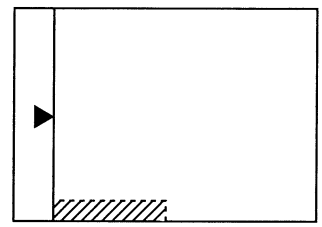
* When the lens unit is moved,execute the OC main scanning magnification ratio auto adjustment,SIM 48-1-1,IM48-3 and the PF original off-center adjustment.

* This adjustment is basically O.K.with IM 63-7.

C.Image density adjustment

(1)Copy mode (SIM 46-1)

1)Set a test chart on the OC table as shown below.



2) Put several sheets of A3 or 11" x 17" white paper on the test chart.
3) Execute SIM 46-1.
4) After warm-up, shading is performed and the current set value of the density level is displayed on the display section in 2 digits.
   For mode selection, use the density select key.
5) Change the set value with the 10-key to adjust the copy image density.
6) Make a copy and check that the specification below is satisfied.

<Adjustment specification>

Density mode	Display lamp	Exposure level	Sharp Gray Chart output	Set value	Set range
Auto	Auto	-	"2" is slightly copied.	The greater the set value is the greater the density is The smaller the set value is the smaller the density is.	1 ~ 99
Text	Text	3	"3" is slightly copied.		
Photo	Photo	3	"2" is slightly copied.		
Toner save	Text/ Photo	3	"3" is slightly copied		
Toner save	Auto/ Photo	-	"2" is slightly copied		

[7] SIMULATIONS

1. Entering the simulation mode

Perform the following procedure to enter the simulation mode.
"#" key → " * " key → "C" key → " * " key →
Main code → Start key → Sub code → Start key

(Note:Perform the first four key strokes quickly allowing no more than one second between key strokes.)

2. Canceling the simulation mode

When the clear all key is pressed, the simulation mode is cancelled.
When the interruption key is pressed, the process is interrupted and the screen returns to the sub code entering display.

* After canceling the simulation mode, be sure to turn OFF/ON the power and check the operation.

Note: If the machine is terminated by a jam error or paper empty during copying in the adjustment by the simulation, recopying is required.

3. List of simulations

Main code	Sub code	Contents
01	01	Mirror scanning operation
	02	Mirror home position sensor (MHPS) status display
	06	Mirror scanning operation aging
02	01	Single paper feeder (SPF) aging
	02	SPF sensor status display
	03	SPF motor operation check
	08	SPF paper feed solenoid operation check
	11	SPF PS release solenoid operation check
05	01	Operation panel display check
	02	Fusing lamp and cooling fan operation check
	03	Copy lamp lighting check
06	01	Paper feed solenoid operation check
	02	Resist roller solenoid operation check
	10	Cassette semi-circular roller cleaning
07	01	Warm-up display and aging with jam
	06	Intermittent aging
	08	Shifting with warm-up display
08	01	Developing bias output
	02	Main charger output (Grid = HIGH)
	03	Main charger output (Grid = LOW)
	06	Transfer charger output
10	-	Toner motor operation
14	-	Trouble cancel (except for U2)
16	-	U2 trouble cancel
20	01	Maintenance counter clear
21	01	Maintenance cycle setting
	02	Mini maintenance cycle setting
22	01	Maintenance counter display
	02	Maintenance preset display
	03	Jam memory display
	04	Jam total counter display
	05	Total counter display
	06	Developing counter display
	07	Mini maintenance preset display
	08	SPF counter display
	09	Paper feed counter display
	12	Drum counter display
	13	CRUM destination display
	14	P-ROM version display
	15	Trouble memory display
	17	Copy counter display
	18	Printer counter display
	21	Scanner counter display
	22	SPF jam counter display
24	01	Jam total counter clear
	02	Trouble memory clear
	04	SPF counter clear
	06	Paper feed counter clear
	07	Drum counter clear
	08	Copy counter clear
	09	Printer counter clear
	13	Scanner counter clear
	14	SPF jam total counter clear
25	01	Main motor operation check
	10	Polygon motor operation check
26	02	Size setting
	05	Count mode setting
	06	Destination setting
	07	Machine condition check (CPM)
	18	Toner save mode setting
	30	CE mark conformity control ON/OFF
	36	Cancel of stop at maintenance life over
	37	Cancel of stop at developer life over
	38	Cancel of stop at drum life over
	39	Memory capacity check
	42	Transfer ON/OFF timing control setting
	43	Side void amount setting
	51	Copy temporary stop function setting
	57	Model setting
30	01	Paper sensor status display
42	01	Developing counter clear
43	01	Fusing temperature setting
	12	Standby mode fusing fan RPM setting
	13	Fusing paper interval control allow/inhibit setting
44	34	Transfer current setting
	40	Setting of rotation time before toner supply
46	01	Copy density adjustment (300dpi)
	02	Copy density adjustment (600dpi)
	09	Copy exposure level adjustment, individual setting (Text) 300dpi
	10	Copy exposure level adjustment, individual setting (Text) 600dpi
	11	Copy exposure level adjustment, individual setting (Photo) 600dpi
	18	Image contrast adjustment (300dpi)
	19	Exposure mode setting (Gamma table setting/AE operation mode setting/ Photo image process setting)
	20	SPF exposure correction
	29	Image contrast adjustment (600dpi)
	30	AE limit setting
	31	Image sharpness adjustment
48	01	Main/sub scanning magnification ratio adjustment
	05	SPF mode sub scanning magnification ratio adjustment in copying
49	01	Flash ROM program writing mode
50	01	Image lead edge adjustment
	06	Copy lead edge position adjustment (SPF)
	10	Paper off-center adjustment
	12	Document off-center adjustment
51	02	Resist amount adjustment
53	08	SPF scanning position automatic adjustment
61	03	HSYNC output check
63	01	Shading check
	07	SPF automatic correction
64	01	Self print

4. Contents of simulations

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>01</td><td>01</td><td>Mirror scanning operation</td><td>When the [START] key is pressed, the home position is checked in the first place, and the mirror base performs A3 full scanning once at the set magnification ratio speed. During this scanning, the set magnification ratio is displayed. The mirror home position sensor status is displayed with the photoconductor cartridge replacement lamp.
(The lamp lights up when the mirror is in the home position.)
During scanning, the copy lamp lights up.
When the [Interrupt] key is pressed, the operation is interrupted to go to the sub code input standby mode.</td></tr>
<tr><td></td><td>02</td><td>Mirror home position sensor (MHPS) status display</td><td>Used to monitor the mirror home position sensor. When the sensor is ON, the photoconductor cartridge replacement lamp is lighted. During that time, the display section displays the sub code.
When the [Interrupt] key is pressed, the machine goes to the sub code input standby mode.
(When the CA key is pressed, the simulation is terminated.)</td></tr>
<tr><td></td><td>06</td><td>Mirror scanning operation aging</td><td>When the [START] key is pressed, the mirror base performs A3 full scanning at the set magnification ratio speed. During scanning, the set magnification ratio is displayed. After 3 seconds, the mirror base performs full scanning again. During scanning, the set magnification ratio is displayed.
* When the [START] key is pressed again, the ready lamp turns and remains off.
The DV replacement/OPC drum cartridge replacement lamp displays the status of the mirror home position sensor. (The lamp lights up when the mirror is in the home position.)
During aging, the copy lamp lights up. When the [Interrupt] key is pressed, the operation is interrupted if operating, and the machine goes into the sub code input standby mode.</td></tr>
<tr><td>02</td><td>01</td><td>Single paper feeder (SPF) aging</td><td>When the [START] key is pressed, the set magnification ratio is acquired and document transport operation of single surface is performed in the case of SPF or document transport operation of duplex surfaces is performed. During operation, the LED on the display section corresponding to the selected magnification ratio lights up, and the magnification ratio is displayed on the 7-seg display.
When the [Interrupt] key is pressed at that time, the machine goes to the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>02</td><td>SPF sensor status display</td><td>The sensor status (ON/OFF) in the SPF can be checked with the following lamps.
When a sensor detects paper, it turns on. The open/close detection sensor turns on when the machine is opened.
<table>
<tr><th>Display lamp</th><th>Sensor</th></tr>
<tr><td>Toner supply lamp</td><td>SPF document set sensor</td></tr>
<tr><td>Copier jam lamp</td><td>SPF document transport sensor</td></tr>
<tr><td>The DV replacement/OPC drum cartridge replacement lamp</td><td>SPF unit (OC cover) open/close sensor</td></tr>
<tr><td>Paper empty lamp</td><td>SPF paper exit sensor</td></tr>
<tr><td>SPF jam lamp</td><td>SPF paper feed cover open/close sensor</td></tr>
<tr><td>Manual paper feed lamp</td><td>SPF paper length sensor 1</td></tr>
<tr><td>Tray jam lamp</td><td>SPF paper length sensor 2</td></tr>
<tr><td>AE lamp</td><td>SPF paper feed width sensor (small)</td></tr>
<tr><td>TEXT lamp</td><td>SPF paper feed width sensor (middle)</td></tr>
<tr><td>PHOTO lamp</td><td>SPF paper feed width sensor (large)</td></tr>
</table>
When the [Interrupt] key is pressed, the machine goes to the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>03</td><td>SPF motor operation check</td><td>When the [START] key is pressed, the motor rotates for 10 sec at the speed corresponding to the set magnification ratio. When the [Interrupt] key is pressed, the machine stops operation and goes to the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>08</td><td>SPF paper feed solenoid operation check</td><td>The SPF paper feed solenoid (PSOL) is turned ON for 500msec and OFF for 500msec.
This operation is repeated 20 times.
After completion of the process, the machine goes to the sub code input standby mode.
When the [Interrupt] key is pressed during the process, the machine goes to the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>11</td><td>SPF PS release solenoid operation check</td><td>The SPF PS release solenoid (CLH) is turned ON for 500msec and OFF for 500msec. This operation is repeated 20 times.
After completion of the process, the machine goes to the sub code input standby mode. When the [Interrupt] key is pressed during the process, the machine goes to the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>05</td><td>01</td><td>Operation panel display check</td><td><<LED check mode (ALL ON/Individual ON)>>
When the [START] key is pressed in the sub code input mode, all the LED's (including the 7-seg lamps) are turned ON. After 5 sec of all ON, the machine goes to the sub code input standby mode.
When the [Mode select] key is pressed during all ON, the lighting mode is shifted to the individual ON mode, where the LED's are individually lighted from the left top, to the left bottom, to the next line top, to the bottom, and so on. (For the 7-seg lamps, the 3-digit lamps are lighted at once.)
After completion of lighting of all the lamps, the mode is shifted to the all ON mode.
After 5 sec of all ON mode, the machine goes to the sub code input standby mode.
Individual ON mode cycle: 300ms for ON 20ms for OFF
When the [Interrupt] key is pressed in the LCD check mode, the machine goes back to the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.
When the [START] key is pressed with all the lamps ON, the machine goes back to the key input check mode.
<< Key input check mode>>
When the machine goes into the key input check mode, [- - -] is displayed on the copy quantity display. Every time when a key on the operation panel is pressed, the input value is added on the copy quantity display.
[- - -] → [1] → [2] → •••.
When a key is pressed once, it is not counted again.
When the [START] key is pressed, the input number is added and displayed for 3 sec, and the machine goes into the LED lighting check mode (LED all ON state). When the [Interrupt] key is pressed for the first time, it is counted. When the key is pressed for the second time, the machine goes into the sub code input mode. When the [CA] key is pressed for the first time, it is counted. When the key is pressed for the second time, the simulation is terminated. (Note for the key input check mode).
•Press the [START] key at the end. (When the key is pressed during the process, the machine goes into the LED lighting check mode (all ON state).).
•When two or more keys are pressed simultaneously, they are ignored.</td></tr>
<tr><td></td><td>02</td><td>Fusing lamp and cooling fan operation check</td><td>When the [START] key is pressed, the fusing lamp turns ON for 500ms and OFF for 500ms.
The operation is repeated 5 times. During this process, the cooling fan motor rotates.
After completion of the process, the machine goes into the sub code input standby mode.</td></tr>
<tr><td></td><td>03</td><td>Copy lamp lighting check</td><td>When the [START] key is pressed, the copy lamp lights up for 5 sec. After completion of lighting, the machine goes into the sub code input mode.
When the [Interrupt] key is pressed, the process is interrupted and the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>06</td><td>01</td><td>Paper feed solenoid operation check</td><td>When this simulation is executed, the sub code is displayed on the 7-seg LED and the lamp corresponding to the solenoid lights up.
Select a solenoid with the tray select key (the lamp corresponding to the solenoid lights up) and press the [START] key, and the machine repeats operation of ON for 500ms and OFF for 500ms. This operation is repeated 20 times.
After that, the machine goes into the sub code entry standby mode.
When [INTERRUPT] key is pressed during the process, the machine goes into the sub code input standby mode. When [CA] key is pressed, the simulation is terminated.
<table><tr><th>Display lamp</th><th>Solenoid</th></tr><tr><td>Main cassette lamp</td><td>Main cassette paper feed solenoid</td></tr><tr><td>2nd cassette lamp</td><td>* 2nd cassette paper feed solenoid</td></tr><tr><td>Manual paper feed lamp</td><td>Manual paper feed solenoid</td></tr><tr><td>2nd cassette jam lamp</td><td>* 2nd cassette paper transport solenoid</td></tr></table>* Supported for the installed models only. Skipped for the models without installation.</td></tr>
<tr><td></td><td>02</td><td>Resist roller solenoid operation check</td><td>When the [START] key is pressed in the sub code input state, the resist solenoid (RRS) turns ON for 500ms and OFF for 500ms. This operation is repeated 20 times.
After completion of the process, the machine goes into the sub code input standby mode.
When [INTERRUPT] key is pressed during the process, the machine goes into the sub code input standby mode. When [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>10</td><td>Cassette semi-circular roller cleaning</td><td>First of all, remove the developer unit.
Enter the simulation code, specify the cassette to be cleaned with the tray select key, and press START button. The main motor rotates to move the cassette semi-circular roller by half circle and make the roller face downward.
After completion of cleaning, when INTERRUPT key is pressed, the machine goes into the sub code entry standby mode and the roller returns to the original positions.
To clean another roller continuously, press INTERRUPT key to return the roller to the original position, and execute the simulation again.
During the operation, the sub code is displayed on the display.
* When CA key is pressed, the simulation mode is terminated.
However, the roller returns to the original position by the initial operation.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>07</td><td>01</td><td>Warm-up display and aging with jam</td><td>Copying is repeated to make the set copy quantity. When this simulation is executed, warm-up is started and warm-up time is counted up every second from 0 and displayed. After completion of warm-up, warm-up time count is stopped. When the [CA] key is pressed, the ready lamp lights up. After that, when the copy quantity is inputted with keys and the [START] key is pressed, copying is repeated to make the set copy quantity. (Intermittent 0 sec)This simulation is canceled by turning off the power or performing a simulation that executes hardware reset.</td></tr>
<tr><td></td><td>06</td><td>Intermittent aging</td><td>Copying is repeated to make the set copy quantity. When this simulation is performed, warm-up is performed and the ready lamp is lighted. Enter the copy quantity with the key and press the [START] key, and copying is repeated to make the set copy quantity, the ready state remains for 3 sec, and copying is repeated again to make the set copy quantity. These operations are repeated.
This simulation is canceled by turning off the power or performing a simulation that executes hardware reset.</td></tr>
<tr><td></td><td>08</td><td>Shifting with warm-up display (Shifting similar to pressing the CA key)</td><td>When the simulation code is entered, warm-up is started and warm-up time is counted up every second from 0 and displayed. When the [CA] key is pressed during counting up, the display section displays "0" and count-up process stops. However, warm-up is continued.
After completion of warm-up, counting is stopped. Press the [CA] key to terminate the simulation mode. (This simulation is similar to SIM07-01, but without the aging function.)</td></tr>
<tr><td>08</td><td>01</td><td>Developing bias output</td><td>When the [START] key is pressed, the developing bias signal is turned ON for 30 sec.
However, to calculate the actual output value is calculated, execute SIM25-01.
After completion of the process, the machine goes into the sub code input standby mode.
When [INTERRUPT] key is pressed during the process, the machine goes into the sub code input standby mode. When [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>02</td><td>Main charger output (Grid = HIGH)</td><td>When the [START] key is pressed, the main charger output is supplied for 30 sec in the grid voltage HIGH mode. After completion of the process, the machine goes into the sub code input standby mode.
When [INTERRUPT] key is pressed during the process, the machine goes into the sub code input standby mode. When [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>03</td><td>Main charger output (Grid = LOW)</td><td>When the [START] key is pressed, the main charger output is supplied for 30 sec in the grid voltage LOW mode. After completion of the process, the machine goes into the sub code input standby mode.
When [INTERRUPT] key is pressed during the process, the machine goes into the sub code input standby mode. When [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>06</td><td>Transfer charger output</td><td>Select an output mode with the [Mode select] key and press the [START] key. The transfer charger output is delivered for 30 sec in the selected mode.
After 30 sec of transfer charger output, the machine goes into the sub code entry standby mode.
When [INTERRUPT] key is pressed during the process, the machine goes into the sub code input standby mode. When [CA] key is pressed, the simulation is terminated.
<table>
<tr><th>Display lamp</th><th>Output mode</th></tr>
<tr><td>AE mode lamp</td><td>Normal size width: Front surface</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>Small size width: Front surface</td></tr>
<tr><td>AE & TEXT & PHOTO mode lamp</td><td>Manual paper feed mode</td></tr>
</table>
•Small size is Letter R (A4R) or smaller.</td></tr>
<tr><td>10</td><td>-</td><td>Toner motor operation</td><td>When the [START] key is pressed, the toner motor is driven for 30 sec.
After completion of the process, the machine goes into the main code input standby mode.
When the [Interrupt] key is pressed, the machine goes into the main code input standby mode.</td></tr>
<tr><td>14</td><td>-</td><td>Trouble cancel (except for U2)</td><td>* Trouble to write into the EEPROM such as H trouble is canceled and hardware reset is performed.</td></tr>
<tr><td>16</td><td>-</td><td>U2 trouble cancel</td><td>* U2 trouble is canceled and hardware reset is performed.</td></tr>
<tr><td>20</td><td>01</td><td>Maintenance counter clear</td><td>When the [Start] key is pressed, the maintenance count value is cleared and "000000" is displayed. (Alternate display of "000" and "000")</td></tr>
<tr><td>21</td><td>01</td><td>Maintenance cycle setting</td><td>The current set maintenance cycle code is displayed (initial display), and the set data are stored.
<table>
<tr><th>Code</th><th>Setting</th></tr>
<tr><td>0</td><td>5,000 sheets</td></tr>
<tr><td>1</td><td>7,500 sheets</td></tr>
<tr><td>2</td><td>10,000 sheets</td></tr>
<tr><td>3</td><td>25,000 sheets</td></tr>
<tr><td>4</td><td>50,000 sheets * Default</td></tr>
<tr><td>5</td><td>Free (999,999 sheets)</td></tr>
</table></td></tr>
<tr><td></td><td>02</td><td>Mini maintenance cycle setting (Valid only when the destination is set to Japan AB series.)</td><td>The current set maintenance cycle code is displayed (initial display), and the set data are stored.
<table>
<tr><th>Code</th><th>Setting</th></tr>
<tr><td>0</td><td>5,000 sheets * Default</td></tr>
<tr><td>1</td><td>10,000 sheets</td></tr>
<tr><td>2</td><td>Free (999,999 sheets)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>22</td><td>01</td><td>Maintenance counter display</td><td>The maintenance counter value is displayed. (Alternate display by 3 digits)</td></tr>
<tr><td></td><td>02</td><td>Maintenance preset display (Valid only when the destination is set to EX Japan)</td><td>The copy quantity corresponding to the code that is set with SIM21-01 is displayed.
(For example: 50,000 sheets)</td></tr>
<tr><td></td><td>03</td><td>Jam memory display</td><td>The LED of the latest jam position is lighted. Every time when the magnification ratio display key is pressed, the jam memory data is acquired sequentially from the latest. The jam position is judged by the acquired data and the corresponding LED is lighted. The 7-seg display indicates the jam number. At that time, "A" is displayed on the upper first digit. When the last one is displayed, the latest one will be displayed again. Max. 30 jams from the latest are stored. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>04</td><td>Jam total counter display</td><td>The jam total counter value is displayed. (Alternate display by 3 digits)</td></tr>
<tr><td></td><td>05</td><td>Total counter display</td><td>The total counter value is displayed. (Alternate display by 3 digits)</td></tr>
<tr><td></td><td>06</td><td>Developing counter display</td><td>The developing counter data is acquired and displayed on the 7-seg display. (Alternate display by 3 digits)
When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>07</td><td>Mini maintenance preset display (Valid only when the destination is set to Japan AB series)</td><td>The mini maintenance cycle data is acquired and displayed on the 7-seg display.
When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>08</td><td>SPF counter display</td><td>The SPF counter value is displayed. (Alternate display by 3 digits)</td></tr>
<tr><td></td><td>09</td><td>Paper feed counter display</td><td>The counter value of the selected paper feed section is acquired from each variable, the data is displayed on the 7-seg display according to the regulations. When this simulation is executed, the value of the first cassette is displayed first. Press the tray select key to select the paper feed tray.
When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>12</td><td>Drum counter display</td><td>The drum counter and the drum rotating time are displayed.
To change the display mode, press the [Mode select] key.
<table>
<tr><th>Display lamp</th><th>Display mode</th></tr>
<tr><td>AE mode lamp</td><td>Drum counter</td></tr>
<tr><td>TEXT mode lamp</td><td>Drum rotating time</td></tr>
</table></td></tr>
<tr><td></td><td>13</td><td>CRUM destination display</td><td>When this simulation is executed, the CRUM destination set (written) in the CRUM chip is displayed. If the display does not match the destination code saved in the CRUM chip, it is judged as an error. This simulation is valid only for the models where the CRUM is valid.
<table>
<tr><th>7-seg display</th><th>Meaning (CRUM destination)</th><th>7-seg display</th><th>Meaning (CRUM destination)</th></tr>
<tr><td>00</td><td>Not set yet</td><td>20</td><td>Olivetti</td></tr>
<tr><td>01</td><td>BTA-A</td><td>99</td><td>Conversion</td></tr>
<tr><td>02</td><td>BTA-B</td><td>11</td><td>AR-Light CRU model</td></tr>
<tr><td>03</td><td>BTA-C</td><td>12</td><td>AL series</td></tr>
<tr><td>04</td><td>BTA-E</td><td></td><td></td></tr>
</table></td></tr>
<tr><td></td><td>14</td><td>P-ROM version display</td><td>The P-ROM version is displayed on the copy quantity display. The main code and the sub code are alternatively displayed by 2 digits. The display interval is same as that of the counter display.
By pressing the fixed magnification ratio key, each version display is switched.
<table>
<tr><th>Display lamp (AB series)</th><th>Display lamp (Inch series)</th><th>Displayed version</th></tr>
<tr><td>141%</td><td>141%</td><td>Machine program</td></tr>
</table></td></tr>
<tr><td></td><td>15</td><td>Trouble memory display</td><td>The trouble codes up to the latest one are acquired from the trouble memory data.
Every time when the magnification ratio display is pressed, the main code of the trouble is displayed on the 1st ~ 2nd digit.
* The latest 20 troubles are stored in the memory.
The 3rd digit indicates the trouble history code, "A" ~ "J" (meaning of 1 ~ 10).
After "J" is displayed, "A" ~ "J" blinks. (Meaning of 11 ~ 20)
After "J" blinks (meaning of 20), "A" ~ "J" is lighted. (Returns to 1.)
When the [START] key is pressed, the sub code is displayed.
When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode.
When the [CA] key is pressed, the simulation is terminated.
* Note that when the history code blinks, the trouble code and the sub code do not blink.</td></tr>
<tr><td></td><td>17</td><td>Copy counter display</td><td>The copy counter value is displayed. (Alternate display by 3 digits) When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>18</td><td>Printer counter display</td><td>The printer counter value is displayed. (Alternate display by 3 digits)When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td></td><td>21</td><td>Scanner counter display</td><td>The scanner counter value is displayed. (Alternate display by 3 digits)When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>22</td><td>22</td><td>SPF jam counter display</td><td>The SPF jam counter value is displayed. (Alternate display by 3 digits)When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td rowspan="10">24</td><td>01</td><td>Jam total counter clear</td><td>When the [START] key is pressed, the jam total count value is reset to zero, and zero is displayed.</td></tr>
<tr><td>02</td><td>Trouble memory clear</td><td>The trouble memory and the EEPROM trouble history data are cleared and "000" is displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>04</td><td>SPF counter clear</td><td>When the [START] key is pressed, the SPF count value is reset to zero and displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>06</td><td>Paper feed counter clear</td><td>The paper feed counter data of each paper feed section is cleared, and "000" is displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>07</td><td>Drum counter clear</td><td>When the [START] key is pressed, the drum count and the drum roasting time are reset to zero, and the drum counter value is displayed on the 7-seg LED. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>08</td><td>Copy counter clear</td><td>When the [START] key is pressed, the copy count value is reset to zero and displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>09</td><td>Printer counter clear</td><td>When the [START] key is pressed, the printer count value is reset to zero and displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>13</td><td>Scanner counter clear</td><td>When the [START] key is pressed, the scanner count value is reset to zero and displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>14</td><td>SPF jam total counter clear</td><td>When the [START] key is pressed, the SPF jam total count value is reset to zero and displayed on the 7-seg display. When the [Interrupt] key is pressed, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated.</td></tr>
<tr><td>25</td><td>01</td><td>Main motor operation check (Cooling fan motor rotation check)</td><td>When the [START] key is pressed, the main motor (together with the duplex motor for the duplex model) is driven for 30 sec. At that time, to save toner consumption, if the developing until is installed, the developing bias, the main charger, and the grid are outputted. Since, in that case, laser discharge is required when the motor stops, the polygon motor is driven simultaneously. Check if the developing unit is installed or not. If it is not installed, the above high voltage is not outputted and only the motor is rotated. After completion of 30 sec operation, the machine goes into the sub code input standby mode.
* This simulation must not be executed by forcibly turning on the door open/close switch.</td></tr>
<tr><td>10</td><td>Polygon motor operation check</td><td>When the [START] key is pressed, the polygon motor is rotated for 30 sec. After completion of 30 sec operation, the machine goes into the sub code input standby mode.</td></tr>
<tr><td>26</td><td>02</td><td>Size setting</td><td>Used to set Enable/Disable of the FC (8.5" x 13") size detection.
<table>
<tr><th>Code number</th><th colspan="2">Setting</th></tr>
<tr><td>0</td><td>FC detection Disable</td><td>* Default except for the following</td></tr>
<tr><td>1</td><td>FC detection Enable</td><td>* Default only for SCA/Philippines</td></tr>
</table>
Detection size when a document of the FC ((8.5" x 13") size is used
<table>
<tr><th></th><th>Unit to be used</th><th>Destination</th><th>Document size</th><th colspan="2">Setting</th></tr>
<tr><th></th><th></th><th></th><th></th><th>0 (Disable)</th><th>1 (Enable)</th></tr>
<tr><td rowspan="4">Document</td><td rowspan="4">SPF</td><td rowspan="2">EX Japan AB series (FC)</td><td>FC (8.5" x 13")</td><td>B4</td><td>FC (8.5" x 13")</td></tr>
<tr><td>B4</td><td>B4</td><td>FC (8.5" x 13")</td></tr>
<tr><td rowspan="2">Inch series (FC)</td><td>FC (8.5" x 13")</td><td>LG (8.5" x 14")</td><td>FC (8.5" x 13")</td></tr>
<tr><td>LG (8.5" x 14")</td><td>LG (8.5" x 14")</td><td>FC (8.5" x 13")</td></tr>
</table>
•For the other destinations, this setting is disabled.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>26</td><td>05</td><td>Count mode setting</td><td>When any key input is made, it is displayed on the display section. When the [START] key is pressed, the set code data are acquired and stored to the count mode set variable and in the EEPROM, and the machine goes into the sub code input standby mode. However, if the [START] key is pressed outside the set range, it is not assured. At that time, when the [Interrupt] key is pressed, the data are not rewritten and the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation is terminated without rewriting the data.
[*1 : Total counter / Developer counter *2 : maintenance counter]
<table>
<tr><td>0:</td><td>*1= Double count</td><td>*2= Double count</td></tr>
<tr><td>1:</td><td>*1= Single count</td><td>*2 = Double count</td></tr>
<tr><td>2:</td><td>*1= Double count</td><td>*2= Single count</td></tr>
<tr><td>3:</td><td>*1= Single count</td><td>*2= Single count</td></tr>
</table></td></tr>
<tr><td></td><td>06</td><td>Destination setting</td><td>When this simulation is executed, the current set destination code number is displayed. Enter the desired code number of the destination and press the [START] key to set the destination.
<table>
<tr><th>Code number</th><th>Destination</th></tr>
<tr><td>0</td><td>Japan AB series</td></tr>
<tr><td>1</td><td>Inch series</td></tr>
<tr><td>2</td><td>EX Japan AB series</td></tr>
<tr><td>3</td><td>EX Japan inch series</td></tr>
<tr><td>4</td><td>EX Japan AB series (FC)</td></tr>
<tr><td>5</td><td>China (EX Japan AB series + China paper support)</td></tr>
<tr><td>6</td><td>Taiwan (EX Japan AB series + China paper support)</td></tr>
</table>
If this setting is changed, SIM46-19 setting is also changed accordingly.
(The paper size is also changed: AB series is changed to A4, and Inch series to Letter.
The AE limit setup is set to the default.
When the destination is changed (from Japan to EX Japan or from EX Japan to Japan), the maintenance cycle is also set to the default according</td></tr>
<tr><td></td><td>07</td><td>Machine condition check (CPM)</td><td>When this simulation is executed, the current setting of the machine is displayed.
<table>
<tr><th>7-seg display</th><th>Meaning (CPM information)</th></tr>
<tr><td>14</td><td>14CPM</td></tr>
<tr><td>15</td><td>15CPM</td></tr>
<tr><td>16</td><td>16CPM</td></tr>
<tr><td>20</td><td>20CPM</td></tr>
</table></td></tr>
<tr><td></td><td>18</td><td>Toner save mode setting</td><td>Used to set ON/OFF of the toner save mode.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0</td><td>Toner save OFF</td></tr>
<tr><td>1</td><td>Toner save ON</td></tr>
</table>
* The toner save mode of the user program is also changed accordingly.</td></tr>
<tr><td></td><td>30</td><td>CE mark conformity control ON/ OFF</td><td>When this simulation is executed, the current set code number of CE mark conformity is displayed. Enter the desired code number of CE mark conformity and press the [START] key to set the code number.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0</td><td>CE mark conformity control OFF *Default for 100V system</td></tr>
<tr><td>1</td><td>CE mark conformity control ON</td></tr>
</table></td></tr>
<tr><td></td><td>36</td><td>Cancel of stop at maintenance life over</td><td>Used to set stop at maintenance life over.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0</td><td>Stop at maintenance life over</td></tr>
<tr><td>1</td><td>Cancel of stop at maintenance life over * Default</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>26</td><td>37</td><td>Cancel of stop at developer life over</td><td>When this simulation is executed, the current set code number is displayed. Enter the desired code number and press the [START] key to set the code number. The machine goes into the sub code input state.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0</td><td>Stop at developer life over</td></tr>
<tr><td>1</td><td>Cancel of stop at developer life over</td></tr>
</table></td></tr>
<tr><td></td><td>38</td><td>Cancel of stop at drum life over</td><td>When this simulation is executed, the current set code number is displayed. Enter the desired code number and press the [START] key to set the code number.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0</td><td>Stop at drum life over</td></tr>
<tr><td>1</td><td>Cancel of stop at drum life over</td></tr>
</table></td></tr>
<tr><td></td><td>39</td><td>Memory capacity check</td><td>When this simulation is executed, the current memory capacity is displayed.
<table>
<tr><th>7-seg display</th><th>Meaning (Memory capacity)</th></tr>
<tr><td>16</td><td>16MByte</td></tr>
<tr><td>32</td><td>32MByte</td></tr>
</table></td></tr>
<tr><td></td><td>42</td><td>Transfer ON/OFF timing control setting</td><td>When this simulation is executed, the current setting value of transfer ON timing is displayed.
Enter a set value and press the [START] key to set the entered value, and the machine will go into the sub code input standby mode.
When the [Mode select] key is pressed, the ON timing setting and the OFF timing setting are alternatively selected. At that time, the setting is saved and written into the EEPROM.
<table>
<tr><th>Display lamp</th><th>Setting mode</th><th>Default</th></tr>
<tr><td>AE mode lamp</td><td>Transfer ON timing</td><td>50</td></tr>
<tr><td>TEXT mode lamp</td><td>Transfer OFF timing</td><td>50</td></tr>
</table>
•Setting range: 1 ~ 99
When the setting value is increased by 1, time is increased by 2ms.
•The default, 50, of transfer ON timing means "344ms passed from PS release."
The default, 50, of transfer OFF timing means "304ms passed from P-IN OFF."</td></tr>
<tr><td></td><td>43</td><td>Side void amount setting</td><td>Used to set the side void amount on the both sides.
Enter a set value with the 10-key and press the [START] key, and the entered value will be saved and the machine will go into the sub code input standby mode.
The setting range is 0 ~ 10. When the set value is increased by 1, the void amount is increased by 0.5mm. The default is 3 (= 1.5mm).
To select the setting mode, press the [Exposure mode select] key. The set value of the selected mode is displayed on the copy quantity display. At that time, the set value is also saved.
<table>
<tr><th>Display lamp</th><th>Setting mode</th></tr>
<tr><td>AE mode lamp</td><td>Side void amount (Right)</td></tr>
<tr><td>TEXT mode lamp</td><td>Side void amount (Left)</td></tr>
</table>
* When the setting value is increased by 1, time is increased by 0.5ms.</td></tr>
<tr><td></td><td>51</td><td>Copy temporary stop function setting</td><td>When any key is pressed, it is displayed on the display section. When the [START] key is pressed, the set code data is acquired and stored to the setting variable of sort/group copy temporary stop function and to the EEPROM. The machine goes into the sub code input standby mode.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0</td><td>Not stop</td></tr>
<tr><td>1</td><td>Stop * Default</td></tr>
</table>
When the [Interrupt] key is pressed at that time, the machine goes into the sub code input standby mode without rewriting the data. When the [CA] key is pressed, the simulation mode is terminated without rewriting the data.
* When this is set to "Stop," temporary stop is made for every 250 copies in one copy job.</td></tr>
<tr><td></td><td>57</td><td>Model setting (Pegasus-Light Olivetti model only)</td><td>Enter the desired model code with 10-key and press START key, and the model information is saved to the EEPROM. The machine goes to the sub code input standby mode. If, however, there is no corresponding model code, press STRT key.
<table>
<tr><th>Model code</th><th>Target model</th></tr>
<tr><td>63</td><td>d-Copia 16W</td></tr>
<tr><td>64</td><td>d-Copia 20W</td></tr>
</table>
When [INTERRUPT] key is pressed, the machine goes to the sub code input standby mode without rewriting the data. When [CA] key is pressed, the simulation mode is terminated.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>30</td><td>01</td><td>Paper sensor status display</td><td>The paper sensor status is displayed with the lamps on the operation panel.
* When each sensor detects paper, the corresponding lamp turns on.
<table>
<tr><th>Display lamp</th><th>Sensor name</th></tr>
<tr><td>Developer lamp</td><td>Paper exit sensor</td></tr>
<tr><td>Machine jam lamp</td><td>Duplex sensor</td></tr>
<tr><td>Toner lamp</td><td>Paper entry sensor</td></tr>
<tr><td>Manual paper feed lamp</td><td>Manual feed paper empty sensor</td></tr>
<tr><td>No. 1 cassette lamp</td><td>No. 1 tray paper empty sensor</td></tr>
<tr><td>No. 2 cassette lamp</td><td>No. 2 tray paper empty sensor</td></tr>
<tr><td>Tray jam lamp 1</td><td>No. 2 tray paper feed sensor</td></tr>
</table></td></tr>
<tr><td>42</td><td>01</td><td>Developing counter clear</td><td>The developer counter data in the EEPROM is cleared and 0 is displayed on the 7-seg display.
When the [Interrupt] key is pressed at that time, the machine goes into the sub code input standby mode. When the [CA] key is pressed, the simulation mode is terminated.</td></tr>
<tr><td>43</td><td>01</td><td>Fusing temperature setting (During normal copy)</td><td>When the simulation is terminated, the current set value is displayed. When the [%] key is pressed, the setting is changed. When the [START] key is pressed, the set content is written into the EEPROM and the machine goes into the sub code input standby mode.
<table>
<tr><th>Set temperature (°C)</th><th>Set temperature (°C)</th></tr>
<tr><td>160
165
170 * Default
175
180</td><td>185
190
195
200</td></tr>
</table></td></tr>
<tr><td></td><td>12</td><td>Standby mode fusing fan RPM setting [redacted]</td><td>When this simulation is executed, the currently set code number is displayed.
When [MODE SELECT] key is pressed, the normal setting and the high fusing temperature setting are switched alternatively.
Enter the code number and press START key, and the number is written into the EEPROM and the machine goes into the sub code entry standby mode.
<table>
<tr><th>Display lamp</th><th>Setting mode</th><th>Default</th></tr>
<tr><td>AE mode lamp</td><td>Normal temperature control (190°C or less)</td><td>Low speed rotation</td></tr>
<tr><td>TEXT mode</td><td>Fusing temperature of 190°C or above</td><td>High speed rotation</td></tr>
</table>
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0
1</td><td>Low speed rotation
High speed rotation</td></tr>
</table></td></tr>
<tr><td></td><td>13</td><td>Fusing paper interval control allow/ inhibit setting</td><td>Used to set the paper feed timing of 21st and later page to A3 or WLT when multi copying or printing paper of narrow width. (A3 or WLT depends on the destination.)
When this simulation is executed, the currently set code number is displayed. Enter a desired code number and press the [START] key, and the entered code number is written into the EEPROM and the machine goes into the sub code entry standby mode.
<table>
<tr><th>Code number</th><th>Setting</th></tr>
<tr><td>0
1</td><td>Inhibit * Default
Allow</td></tr>
</table>
<Applicable paper>
1) Cassette paper feed: A4R, B5R, 8-1/2" X 14", 8-1/2" X 13", 8-1/2" X 11", A5, INV
2) Manual paper feed: A4R, B5R, 8-1/2" X 14", 8-1/2" X 13", 8-1/2" X 11", A5, INV,16KR
* A5 size for manual paper feed is valid only for EX Japan AB series.</td></tr>
<tr><td>44</td><td>34</td><td>Transfer current setting</td><td>Used to set the transfer current for the front surface and that for the back surface. When this simulation is executed, the current set value is displayed on the 7-seg display. Select the set value with the zoom (Up/Down) keys and press the [START] key, and the set content is written into the EEPROM and the machine goes into the sub code input standby mode. Press the [Mode select] key to select each setting mode. At that time, the setup content is written into the EEPROM.
The set range is 90uA ~ 360uA in the increment of 10uA.
<table>
<tr><th>Display lamp</th><th>Setting mode</th></tr>
<tr><td>AE mode lamp</td><td>Normal size width: Front</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>Small size width: Front</td></tr>
<tr><td>AE & TEXT & PHOTO mode lamps</td><td>Manual paper feed</td></tr>
</table>
* Small size paper must be Letter R (A4R) or smaller.
* For the special size of tray, use the normal size width.</td></tr>
<tr><td></td><td>40</td><td>Setting of rotation time before toner supply</td><td>Used to set the time interval between start of rotation (ready) of the main motor and start of toner supply in previous rotation after supplying the power. [1] ~ [99] (Default [8], unit: sec)</td></tr>
</table>

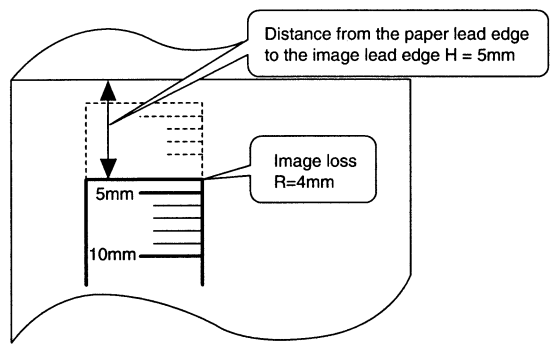
<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>46</td><td>01</td><td>Copy density adjustment (300dpi)</td><td>Used to set the copy density for each mode.
(Operating procedure)
When this simulation is executed, warm-up and shading are operated, and the current set value is displayed in two digits. (Default [50])
* The density LED is not lighted.
Change the set value and press the [START] key, and a copy is made according to the set value. The greater the set value is, the darker the density is, and vise versa. In this case, only a copy at Exp. 3 can be made. When, however, the density is set darker, Exp.1 and Exp. 5 become darker, too. If the dentistry is set lighter, Exp. 1 and Exp. 5 become lighter, too. To select a desired copy mode, press the [Copy mode select] key. The selected copy mode set value is displayed on the copy quantity display. (Adjustment range: 1 ~ 99)
<table>
<tr><th>Display lamp</th><th>Copy mode</th></tr>
<tr><td>AE mode lamp</td><td>AE mode (300dpi)</td></tr>
<tr><td>TEXT mode lamp</td><td>TEXT mode (300dpi)</td></tr>
<tr><td>PHOTO mode lamp</td><td>PHOTO mode</td></tr>
<tr><td>TEXT mode lamp & PHOTO mode lamp</td><td>TS mode (TEXT) (300dpi)</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>TS mode (AE) (300dpi)</td></tr>
</table></td></tr>
<tr><td></td><td>02</td><td>Copy density adjustment (600dpi)</td><td>Used to set the copy density for each mode.
(Operating procedure)
When this simulation is executed, warm-up and shading are operated, and the current set value is displayed in two digits. (Default [50])Change the set value and press the [START] key, and a copy is made according to the set value. The greater the set value is, the darker the density is, and vise versa. In this case, only a copy at Exp. 3 can be made.
When, however, the density is set darker, Exp.1 and Exp. 5 become darker, too.
If the dentistry is set lighter, Exp. 1 and Exp. 5 become lighter, too.
To select a desired copy mode, press the [Copy mode select] key.
The selected copy mode set value is displayed on the copy quantity display.
(Adjustment range: 1 ~ 99)
<table>
<tr><th>Display lamp</th><th>Copy mode</th></tr>
<tr><td>AE mode lamp</td><td>AE mode (600dpi)</td></tr>
<tr><td>TEXT mode lamp</td><td>TEXT mode (600dpi)</td></tr>
<tr><td>PHOTO mode lamp</td><td>PHOTO mode</td></tr>
<tr><td>TEXT mode lamp & PHOTO mode lamp</td><td>TS mode (TEXT) (600dpi)</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>TS mode (AE) (600dpi)</td></tr>
</table></td></tr>
<tr><td></td><td>09</td><td>Copy exposure level adjustment, individual setting (Text) 300dpi</td><td>Used to adjust the shift amount and the inclination value for each density level (1 ~ 5) when the exposure mode is the TEXT mode (including TS)
•The shift amount is the same as the gamma (gradation), and is used to set the overall brightness.
When the shift amount is increased, the overall brightness is decreased.
When the shift amount is decreased, the overall brightness is increased
•The inclination value changes the gamma (gradation).
When the set value is increased, the gamma is increased to increase the contrast.
(Clearer black and white images)
When the set value is decreased, the gamma is decreased to decrease the contrast.
(Increased gradation)
* Press the [%] key to switch between the shift amount and the inclination value.
The 7-seg display shows the mode.
The initial display is "Shift.
Shift is indicated as "b" (Brightness).
Inclination is indicated as "c" (Contrast).
(Example)
[b50] → [%T] key → [c50] → [%] key → [b50] → [%] key → [c50] → •••
* Select the adjustment level with the [Density adjust] key.
The density LED displays the selected level (Exp. 1 ~ Exp. 5)
* Select TEXT or TEXT (TS) with the [Mode select] key.
<table>
<tr><th>Mode lamp</th><th>Exposure mode to be adjusted</th></tr>
<tr><td>TEXT mode lamp</td><td>TEXT mode</td></tr>
<tr><td>TEXT mode lamp & PHOT mode lamp</td><td>TEXT (TS) mode</td></tr>
</table>
* Change the shift amount and the inclination value with the 10-key.
The set range is [1] ~ [99]. The default is [50].
Change the set value and press the [START] key, and a copy is made at the set value.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>46</td><td>10</td><td>Copy exposure level adjustment, individual setting (Text) 600dpi</td><td>Used to adjust the shift amount and the inclination value for each density level (1 ~ 5) when the exposure mode is the TEXT mode (including TS)
•The shift amount is the same as the gamma (gradation), and is used to set the overall brightness.
When the shift amount is increased, the overall brightness is decreased.
When the shift amount is decreased, the overall brightness is increased
•The inclination value changes the gamma (gradation).
When the set value is increased, the gamma is increased to increase the contrast.
(Clearer black and white images)
When the set value is decreased, the gamma is decreased to decrease the contrast.
(Increased gradation)
* Press the [%] key to switch between the shift amount and the inclination value.
The 7-seg display shows the mode.
The initial display is "Shift.
Shift is indicated as "b" (Brightness).
Inclination is indicated as "c" (Contrast).
(Example)
[b50] → [%T] key → [c50] → [%] key → [b50] → [%] key → [c50] → •••
* Select the adjustment level with the [Density adjust] key.
The density LED displays the selected level (Exp. 1 ~ Exp. 5)
* Select TEXT or TEXT (TS) with the [Mode select] key.
<table><tr><th>Mode lamp</th><th>Exposure mode to be adjusted</th></tr><tr><td>TEXT mode lamp</td><td>TEXT mode</td></tr><tr><td>TEXT mode lamp & PHOT mode lamp</td><td>TEXT (TS) mode</td></tr></table>* Change the shift amount and the inclination value with the 10-key.
The set range is [1] ~ [99]. The default is [50].
Change the set value and press the [START] key, and a copy is made at the set value.</td></tr>
<tr><td></td><td>11</td><td>Copy exposure level adjustment, individual setting (Photo) 600dpi</td><td>Used to adjust the shift amount and the inclination value for each density level (1 ~ 5) when the exposure mode is the PHOTO mode
•The shift amount is the same as the gamma (gradation), and is used to set the overall brightness.
When the shift amount is increased, the overall brightness is decreased.
When the shift amount is decreased, the overall brightness is increased
•The inclination value changes the gamma (gradation).
When the set value is increased, the gamma is increased to increase the contrast.
(Clearer black and white images)
When the set value is decreased, the gamma is decreased to decrease the contrast.
(Increased gradation)
* Press the [%] key to switch between the shift amount and the inclination value.
The 7-seg display shows the mode.
The initial display is "Shift."
Shift is indicated as "b" (Brightness).
Inclination is indicated as "c" (Contrast).
(Example)
[b50] → [%T] key → [c50] → [%] key → [b50] → [%] key → [c50] → •••
* Select the adjustment level with the [Density adjust] key.
The density LED displays the selected level (Exp. 1 ~ Exp. 5)
* The [Mode select] key is invalid, and the PHOTO lamp lights up.
* Change the shift amount and the inclination value with the 10-key.
The set range is [1] ~ [99]. The default is [50].
Change the set value and press the [START] key, and a copy is made at the set value.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>46</td><td>18</td><td>Image contrast adjustment (300dpi)</td><td>Used to adjust the contrast for each mode.
(Operating procedure)
When this simulation is executed, warm-up and shading are performed, and the current set value is displayed in two digits. (Default: 50)
* The density LED is not lighted.
Change the set value and press the [START] key, and a copy is made according to the set value.
The greater the set value is, the higher the contrast is.
The smaller the set value is, the lower the contrast is.
In this case, only a copy at Exp. 3 is made.
However, the contrasts at Exp.1 and Exp. 5 are also changed accordingly.
To select a desired copy mode, press the [Copy mode select] key.
The selected copy mode set value is displayed on the copy quantity display.
(Adjustment range: 1 ~ 99)
<table>
<tr><th>Display lamp</th><th>Copy mode</th></tr>
<tr><td>AE mode lamp</td><td>AE mode (300dpi)</td></tr>
<tr><td>TEXT mode lamp</td><td>TEXT mode (300dpi)</td></tr>
<tr><td>PHOTO mode lamp</td><td>PHOTO mode</td></tr>
<tr><td>TEXT mode lamp & PHOTO mode lamp</td><td>TS mode (TEXT) (300dpi)</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>TS mode (AE) (300dpi)</td></tr>
</table>
</td></tr>
<tr><td></td><td>19</td><td>Exposure mode setting (Gamma table setting / AE operation mode setting / PHOTO image process setting)</td><td>Used set for the following three exposure mode. Enter a code number and press the [START] key, and the entered number is written into the EEPROM and the machine goes into the sub code entry standby mode. (When the [Copy mode select] key is pressed, the number is written into the EEPROM and the set item is changed.)
<<Gamma table setting>>
When this simulation is executed, the current set code number of gamma table is displayed.
(Default: Japan -1. EX Japan -2)
* When setting the gamma table, no "Mode lamps" are lighted.
<table>
<tr><th>Code number</th><th>Setting (Gamma table)</th></tr>
<tr><td>1</td><td>Image quality priority mode * Default for Japan models</td></tr>
<tr><td>2</td><td>Toner consumption priority mode * Default for EX Japan models</td></tr>
</table>
* If this setting is changed, the set content of SIM46-30 is reset to the default.
<<AE mode>>
When the [Copy mode select] key is pressed in gamma table setting, the mode is changed to the AE operation mode setting and the current set code number of the AE operation mode is displayed.
(Default: 0)
* When setting the AE operation mode, the "AE mode lamp" is lighted.
<table>
<tr><th>Code number</th><th>Setting (AE operation mode)</th></tr>
<tr><td>0</td><td>Lead edge stop * Default</td></tr>
<tr><td>1</td><td>Rear time process</td></tr>
</table>
<Photo image process setting>
When the [Copy mode select] key is pressed during the AE operation mode setting, the setting mode is changed to the photo image process setting and the currently set code number of the photo image process setting is displayed.
* When in the photo image process setting, the [Photo mode lamp] is lighted.
<table>
<tr><th>Code number</th><th>Setting (Photo image process setting)</th></tr>
<tr><td>1</td><td>Error diffusion process</td></tr>
<tr><td>2</td><td>Dither process * Default</td></tr>
</table>
* When this setting is changed, SIM 46-1/2/18/29 and SIM 46-31 Photo items are reset to the default. (SIM 46-11 is also linked.)</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>46</td><td>20</td><td>SPF exposure correction</td><td>Used to adjust the exposure correction amount in the SPF mode (for the OC mode).
(Operating procedure)
When this simulation is executed, the current set value is displayed.
Enter the adjustment value with the 10-key and press the [START] key.
The entered set value is stored and a copy is made.
When the [INTERRUPT] key is pressed, the entered value is saved and the machine goes into the sub code entry standby mode. When the [CA] key is pressed, the entered value is saved and the simulation is terminated. [1] ~ [99] (Center [50])
* The greater the set value is, the darker the density is. The smaller the set value is, the lighter the density is.
* The exposure mode is TEXT fixed. The LED does not change, either. The exposure level can not be adjusted.</td></tr>
<tr><td></td><td>29</td><td>Image contrast adjustment (600dpi)</td><td>Used to adjust the contrast for each mode.
(Operating procedure)
When this simulation is executed, warm-up and shading are performed, and the current set value is displayed in two digits. (Default: 50)
Change the set value and press the [START] key, and a copy is made according to the set value.
The greater the set value is, the higher the contrast is.
The smaller the set value is, the lower the contrast is.
In this case, only a copy at Exp. 3 is made.
However, the contrasts at Exp.1 and Exp. 5 are also changed accordingly.
To select a desired copy mode, press the [Copy mode select] key.
The selected copy mode set value is displayed on the copy quantity display.
(Adjustment range: 1 ~ 99)
<table>
<tr><th>Display lamp</th><th>Copy mode</th></tr>
<tr><td>AE mode lamp</td><td>AE mode (600dpi)</td></tr>
<tr><td>TEXT mode lamp</td><td>TEXT mode (600dpi)</td></tr>
<tr><td>PHOTO mode lamp</td><td>PHOTO mode</td></tr>
<tr><td>TEXT mode lamp & PHOTO mode lamp</td><td>TS mode (TEXT) (600dpi)</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>TS mode (AE) (600dpi)</td></tr>
</table></td></tr>
<tr><td></td><td>30</td><td>AE limit setting</td><td>Used to set the AE and the limit value at AE (toner save).
Change the setting and press the [START] key, and it will be written into the EEPROM and the machine will go into the sub code input standby mode. When the [Copy mode select] key is pressed, the machine goes back to the gamma table setting mode.
(The set range is 0 ~ 31. The default is 0.)
<table>
<tr><th>Display lamp</th><th>Setting mode</th></tr>
<tr><td>AE mode lamp</td><td>Limit value for AE</td></tr>
<tr><td>AE mode lamp $ PHOTO mode lamp</td><td>Limit value for AE (Toner save)</td></tr>
</table>
<Remark>
When SIM26-60 (Destination setting) and SIM46-19 (Auto exposure mode) are changed, this set content of this simulation is also changed to the default.</td></tr>
<tr><td></td><td>31</td><td>Image sharpness adjustment</td><td>Used to adjust clear/shading of image for each mode.
(Operating procedure)
When this simulation is executed, warm-up and shading are performed, and the current set value is displayed in two digits. (Default: 1)
Change the set value and press the [START] key, and a copy is made according to the set value.
<table>
<tr><th>Set value</th><th>Image quality</th></tr>
<tr><td>0</td><td>Shading</td></tr>
<tr><td>1</td><td>Standard *Default</td></tr>
<tr><td>2</td><td>Clear</td></tr>
</table>
Use the [Copy mode select] key to select each copy mode. The code number of the selected copy mode is displayed on the copy quantity display.
<table>
<tr><th>Display lamp</th><th>Copy mode</th></tr>
<tr><td>AE mode lamp</td><td>AE mode</td></tr>
<tr><td>TEXT mode lamp</td><td>TEXT mode</td></tr>
<tr><td>PHOTO mode lamp</td><td>PHOTO mode</td></tr>
<tr><td>TEXT mode lamp & PHOTO mode lamp</td><td>TS mode (TEXT)</td></tr>
<tr><td>AE mode lamp & PHOTO mode lamp</td><td>TS mode (AE)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>48</td><td>01</td><td>Main/sub scanning direction magnification ratio adjustment</td><td>Used to adjust the magnification ratio in the main scanning direction (front/rear) and the sub scanning direction.
Enter the adjustment value with the 10-key and press the [START] key, and the entered value is saved a copy is made.
(When the set value is increased by 1, the magnification ratio is increased by 0.1 %.)
(Adjustment range: 1 ~ 99, Default: 50)
<table><tr><th>Lighting lamp</th><th>Adjustment mode</th></tr><tr><td>TEXT lamp
PHOTO lamp</td><td>Main scanning direction magnification ratio adjustment
Sub scanning direction magnification ratio adjustment</td></tr></table></td></tr>
<tr><td></td><td>05</td><td>SPF mode sub scanning magnification ratio adjustment in copying</td><td>The current SPF mode sub scan direction magnification ratio adjustment value is displayed. When the [START] key is pressed, the entered value is acquired and saved into the EEPROM, and a copy is made. When the [CA] key is pressed instead, the simulation mode is terminated.
In SPF adjustment, after the machine enters the copy mode of one page, select the single copy mode with the duplex key to shift to the single copy mode, making two pages of single copy.
For printing, regardless of the density mode LED and the density level LED display, the density mode = MANUAL, and density level = 3.
<table><tr><th>Lighting lamp</th><th>Adjustment mode</th></tr><tr><td>AE lamp</td><td>SPF document surface magnification ratio adjustment</td></tr></table></td></tr>
<tr><td>49</td><td>01</td><td>Flash ROM program writing mode</td><td>(Operating procedure)
When this simulation is executed, "d" is displayed on the copy quantity display and the machine enters the Flash ROM program writing mode. Use the writing tool on the PC to write the program. During writing, the display is made as follows. After completion of downloading, turn OFF/ON the power to reset.
<table><tr><th>Status</th><th>Copy quantity display</th><th>Pre-heat lamp</th><th>Ready lamp</th></tr><tr><td>Download data reception</td><td>"d"</td><td>ON</td><td>OFF</td></tr><tr><td>Data delete start</td><td>"d"</td><td>OFF</td><td>ON</td></tr><tr><td>Data writing (Boot section)</td><td>"d"</td><td>Flash</td><td>OFF</td></tr><tr><td>Data writing (Program section)</td><td>"d"</td><td>Flash</td><td>Flash</td></tr><tr><td>Sum check</td><td>"d"</td><td>ON</td><td>ON</td></tr><tr><td>Completion of downloading</td><td>"OFF"</td><td>OFF</td><td>OFF</td></tr><tr><td>Error status</td><td>"*E"</td><td>OFF</td><td>OFF</td></tr></table>* "**" in the error display indicates the error position.
<table><tr><td>00 Data receive error</td><td>07 Sum check error (Program section)</td></tr><tr><td>02 FLASH ROM delete error</td><td>08 Sum check error (EEPROM section)</td></tr><tr><td>03 FLASH ROM write error (Boot section)</td><td>09 E2PROM write error</td></tr><tr><td>04 FLASH ROM write error (Program section)</td><td>0a E2PROM read error</td></tr><tr><td>05 Sum check error (Loader section)</td><td>0b E2PROM verify error</td></tr><tr><td>06 Sum check error (Boot section)</td><td>0F Download data length error</td></tr></table></td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>50</td><td>01</td><td>Image lead edge adjustment</td><td>
Used to adjust the copy image position and the lead edge void amount on the copy paper. This adjustment is made by adjusting the image scan start position at 100% and the print start position (resist roller ON timing).
(Operating procedure)
When this simulation is executed, the current set value is displayed in two digits. (Center value: 50) When the copy mode select key is pressed, the setting mode and the display are switched. Enter the adjustment value with the 10-key and press the [START] key, and the entered value is set and a copy is made. (Adjustment range 1 ~ 99) When the [INTERRUPT] key is pressed, the entered value is saved and the machine goes into the sub code entry standby mode. When the [CA] key is pressed, the entered value is saved and the simulation is terminated. When the adjustment is made with the main cassette paper feed, all the adjustment values at the paper feed ports become the same. (When the adjustment value is increased by 1, the position is shifted by about 0.1mm.)
<table>
<tr><th>Lighting lamp</th><th>Adjustment mode</th></tr>
<tr><td>AE, Main cassette lamp</td><td>Print start position (Main cassette paper feed)</td></tr>
<tr><td>AE, 2nd cassette lamp</td><td>★ Print start position (2nd cassette paper feed)</td></tr>
<tr><td>AE, Manual paper feed lamp</td><td>Print start position (Manual paper feed)</td></tr>
<tr><td>TEXT lamp</td><td>Image lead edge void amount</td></tr>
<tr><td>PHOTO lamp</td><td>Image scan start position</td></tr>
<tr><td>AE, TEXT, PHOTO lamp</td><td>Image rear edge void amount</td></tr>
</table>
* The mark, "★", indicates that it is supported only for the installed model, and it is skipped for non-installed models.
Note: When printing is made with manual paper feed, use A3 paper.
When the adjustment value of the print start position is increased by 1, the resist roller ON timing is delayed and the print image is reduced by 0.1mm. When the adjustment value of the image scan start position is increased by 1, the scan start position is shifted to the home position by 0.1mm.
[Adjustment procedure]
(1) Set the print start position (A) (AE ON), the lead edge void amount (B) (TEXT ON), and the scan start position (C) (PHOTO ON) to <1>, and make a 100% copy.
(2) Measure the image loss (R mm) of the scale. Set as C=10 x R (mm). (Example: Set to 40.)
When the value of C is increased by 10, the image loss is decreased by 1mm. (Default: 50)
(3) Measure the distance between the paper lead edge and the image print start position.
Set as A=10 x H (mm). (Example: Set to 50.)
When the value of A is increased by 10, the image lead edge is shifted toward the paper lead edge by 1mm. (Default: 50)
(4) Set the lead edge void area as B=50 (2.5mm). (Default: 50)
When the value of B is increased by 10, the void is increased by about 1mm.
(For 25 or less, however, the void amount is zero.)
(Example)


</td></tr>
<tr><td></td><td>06</td><td>Copy lead edge position adjustment (SPF)</td><td>
Used to make the SPF copy lead edge position adjustment.
* When the adjustment value of the document scan start position is increased by 1, the scan start timing is advanced by 0.1mm. The print image is shifted to the reverse side of the scan start position.
(Adjustment range: 1 ~ 99, Default: 50)
<Adjustment items>
<table>
<tr><th>Lighting lamp</th><th>Item</th><th>Default</th><th>Variable range</th></tr>
<tr><td>AE</td><td>Front document scan position adjustment</td><td>50</td><td>1 ~ 99</td></tr>
<tr><td>PHOTO</td><td>BRear edge void adjustment (SPF)</td><td>50</td><td>1 ~ 99</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>50</td><td>10</td><td>Paper off-center adjustment</td><td>Used to adjust the positions of copy images on copy paper and the center offset position when scanning the document.
(Operating procedure)
When this simulation is executed, the current set value is displayed. Enter the adjustment value with the 10-key and press the [START] key, and the entered value is stored and a copy is made.
(Adjustment range: 1 ~ 99, Default: 50)
When the [INTERRUPT] key is pressed, the entered value is saved and the machine goes into the sub code entry standby mode. When the [CA] key is pressed, the entered value is saved and the simulation is terminated.
(When the set value is increased by 1, the position is shifted by 0.1mm.)
<Supplement>
When the adjustment value is increased, the image is shifted to the left. When the adjustment value is decreased, the image is shifted to the right.
<table><tr><th>Lighting lamp</th><th>Adjustment mode</th></tr><tr><td>AE, Main cassette lamps</td><td>Print center offset (Main cassette paper feed)</td></tr><tr><td>AE, 2nd cassette lamps</td><td>★ Print center offset (2nd cassette paper feed)</td></tr><tr><td>AE, Manual paper feed lamps</td><td>Print center offset (Manual paper feed)</td></tr><tr><td>TEXT, main cassette lamps</td><td>2nd print center offset (Main cassette paper feed)</td></tr></table>★ Supported for the installed models only. Skipped for the models without installation.
Note: When the adjustment value is too great, the outside area of shading may be scanned, resulting in black streaks on copy paper.
When printing is made with manual paper feed, use A3 paper.</td></tr>
<tr><td></td><td>12</td><td>Document off-center adjustment</td><td>Used to make the document scan off-center adjustment.
(Adjustment range: 1 ~ 99, Default: 50)
* When the adjustment value is increased by 1, the print image is shifted by 0.1mm to the left when the scan start position is put on the upper side.
<Adjustment item>
<table><tr><th>Lighting lamp</th><th>Item</th><th>Default</th><th>Variable range</th></tr><tr><td>AE</td><td>Platen document scan</td><td>50</td><td>1 ~ 99</td></tr><tr><td>TEXT</td><td>SPF document front scan</td><td>50</td><td>1 ~ 99</td></tr></table></td></tr>
<tr><td>51</td><td>02</td><td>Resist amount adjustment</td><td>Used to adjust the contact pressure of the machine resist roller and the SPF resist roller onto the paper.
(Operating procedure)
When this simulation is executed, the current set value is displayed.
When the exposure mode key is pressed, the following set items are changed sequentially. Enter an adjustment value with the 10-key and press the [START] key, and the entered value will be saved and a copy will be made. (Adjustment range: 1 ~ 99, Default: 50)
When the [CA] key is pressed, the entered value is saved and the simulation is terminated.
<table><tr><th>Lighting lamp</th><th>Adjustment mode</th></tr><tr><td>AE, Main cassette lamp</td><td>Main cassette paper feed</td></tr><tr><td>AE, 2nd cassette lamp</td><td>★ 2nd cassette paper feed</td></tr><tr><td>AE, Manual paper feed lamp</td><td>Manual paper feed</td></tr><tr><td>AE, TEXT, PHOTO lamps</td><td>★ SPF document feed (Front surface)</td></tr></table>★ Supported for the installed models only. Skipped for the models without installation.</td></tr>
<tr><td>53</td><td>08</td><td>SPF scanning position automatic adjustment</td><td>Place the black chart so that it covers both the SPF scan glass and the OC glass. Close the OC cover. When this simulation is executed, the current adjustment value is displayed as the initial display. When the [START] key is pressed, the mirror unit scans from the home position to the SPF scan position with the current adjustment value displayed, and the SPF glass cover edge is calculated from the difference between the SPF glass cover edge and the OC side document glass CCD output level.
* The default is 50, the adjustment range is 1 ~ 99, and the adjustment unit 1= about 0.127mm.
If the adjustment is completed normally, the adjusted value is displayed. If not, the jam lamp lights up with the current set value displayed. When the [START] key is pressed again with the jam lamp ON, the execution is repeated again. When the [Interrupt] key or the [CA] key is pressed during execution, "- -" is displayed and the operation is canceled. The mirror returns to its home position and the simulation mode is terminated. In the case when the [Interrupt key] is pressed, the machine goes into the sub code input standby mode. In the case when the [CA] key is pressed, all the lamps are turned off.
<table><tr><th>ON lamp</th><th>Display mode</th></tr><tr><td>AE lamp</td><td>SPF scan position automatic adjustment</td></tr><tr><td>TEXT lamp</td><td>SPF scan position manual adjustment</td></tr></table></td></tr>
<tr><td>61</td><td>03</td><td>HSYNC output check</td><td>When the [START] key is pressed, HSYNC is performed and the polygon motor is rotated for 30 sec. Every time when HSYNC is detected, the zoom lamp is lighted for 100msec.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Details of operation</th></tr>
<tr><td>63</td><td>01</td><td>Shading check</td><td>The detection level of the white plate for shading is displayed.
(Operating procedure)
When the [START] key is pressed in the sub code input standby mode, the mirror base unit moves to the white plate for shading and the copy lamp is lighted. Until the light quantity of the copy lamp is stabilized, the sub code of "01" is displayed on the 7-seg display. When the light quantity of the copy lamp is stabilized, it is revised every second, and the level of one pixel at the CCD center where no correction is made is detected for 10 sec, and the detected level is displayed in hexadecimal on the 7-seg display. After completion of 10 sec detection, the machine goes into the sub code input standby mode.</td></tr>
<tr><td></td><td>07</td><td>SPF automatic correction</td><td>The SPF white correction start pixel position is automatically adjusted.
This is performed after replacement of the lens. Open the SPF unit and press the [START] key, and the position (which pixel) of the white sheet for SPF exposure correction in the SPF position is displayed on the 7-seg display.
If the value is 93 ~ 229, it is displayed on the 7-seg display and is written into the EEPROM.
If the value is 0 ~ 92 or 230 ~ 999, it is displayed on the 7-seg display but is not written into the EEPROM.
If the value is 1000 or above, "-------" is displayed on the 7-seg display and is not written into the EEPROM.
The pixel position -34 written into the EEPROM is considered as the SPF white correction start pixel of the machine.
When shi simulation is executed with the SPF unit closed, an error will occur.</td></tr>
<tr><td>64</td><td>01</td><td>Self print</td><td>The optical system status is ignored and a self print is made. Also when a print command is sent from the host, printing is performed.
(Operating procedure)
When this simulation is executed, warm-up is performed and the ready lamp is lighted.
(However, the scanner is invalid and no initial operation is made.)
Enter the code number with 10-key, and select a cassette with the cassette select key and press the [START] key. The selected cassette start paper feed and printing is performed in the selected pattern.
* Only the tray lamp and the online lamp are lighted, and no other lamps are lighted.
Printing is made in 1 by 2 mode, where one line is printed and the following two liens are not printed, or in the grid pattern.
<table>
<tr><th>Code number</th><th>Pattern</th></tr>
<tr><td>0</td><td>1 by 2</td></tr>
<tr><td>1</td><td>Grid pattern</td></tr>
<tr><td>2</td><td>White paper</td></tr>
<tr><td>3</td><td>Black background</td></tr>
</table>
* Input disable for 4 ~ 99
* Print data are made on A3 size. (A3 paper is preferable.)</td></tr>
</table>

[8] USER PROGRAMS

The user programs allow the parameters of certain functions to be set, changed, or canceled as desired.

1. List of user programs

This copier has the following user programs.

Program name	Program No	Description	Default	Parameters
Auto clear time	1	"Auto clear time" automatically returns the copy settings to the initial settings when a certain period of time elapses after a copy is made. This program is used to select the period of time. "Auto clear time" can also be disabled.	60sec	1 (OFF) 2 (10sec) 3 (20sec) 4 (60sec) 5 (90sec) 6 (120sec)
Preheat mode	2	This function automatically switches the machine to a low power consumption state if the set duration of time elapses without the machine being used when the power is on. The POWER SAVE indicator lights up, however, the keys on the operation panel can be used. Normal operation automatically resumes when a key on the operation panel is pressed, a print job is received or an original is placed.	1min	1 (1min) 2 (5min) 3 (30min) 4 (60min) 5 (120min) 6 (240min)
Auto power shut-off timer	3	This function automatically switches the machine to a state that consumes even less power than preheat mode if the set duration of time elapses without the machine being used when the power is on. All lights except the POWER SAVE indicator and ON LINE indicator go off. To resume normal operation, press the [START] key. Normal operation also resumes automatically when a print job is received or scanning is begun from a computer. While in auto power shut-off mode, no keys (except the [START] key) can be used.	5min	1 (5min) 2 (30min) 3 (60min) 4 (120min) 5 (240min)
Stream feeding mode*1	4	When copying using the SPF, during the period of time that the SPF indicator blinks after an original has been scanned (about 5 seconds), a subsequent original can be placed and automatically fed into the machine.	OFF	0 (OFF) 1 (ON)
Auto power shut-off setting	5	Use this setting to enable or disable auto power shut-off.	ON	0 (OFF) 1 (ON)
Auto paper select mode*2	8	This function automatically selects paper that is the same size as the original placed in the SPF, or the same size as that selected with the [ORIGINAL SIZE ENTER] key. The function can be disabled.	ON	0 (OFF) 1 (ON)
Auto tray switching*2	9	If the paper runs out during printing and there is paper of the same size and orientation in another tray, this function automatically switches to that tray (excluding the bypass tray). The function can be disabled.	ON	0 (OFF) 1 (ON)
Auditing mode	10	Use to enable or disable "Auditing mode". "Auditing mode" is initially disabled.	OFF	0 (OFF) 1 (ON)
Account number entry	11	Use to set up account numbers. Up to 20 accounts can be established.	-	-
Account number change	12	Use to change an account number.	-	-
Account number deletion	13	Use to delete an account number. A single account number can be deleted, or all account numbers at once.	Delete single account	0 (Delete single account) 1 (Delete all accounts)
Number of copies per account	14	This displays the number of copies made by each account. The maximum count is 49,999. If this number is exceeded, the count will start over from 0.	-	-
Resetting account	15	Use to reset the copy count of an account to 0. The copy count of a single account or of all accounts can be reset.	Reset single account	0 (Reset single account) 1 (Reset all accounts)
Resolution in Auto/Text mode	23	This setting is used to change the copy resolution in AUTO and TEXT mode from 600 x 300 dpi to 600 x 600 dpi (high-quality mode). Scanning is slower when high-quality mode is used.	300dpi	1 (300dpi) 2 (600dpi)

*1 On models with a SPF.

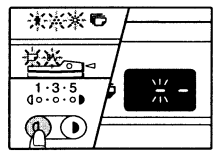
*2 On model with the two trays.

Program name	Program No	Description	Default	Parameters
Key auto repeat	25	Use this setting to select whether or not holding down a key causes repeated input of the key. For keys that normally cause a set value to increase when held down (for example, holding down the [ZOOM] key), this program can be used to have the set value not change when the key is held down.	ON	0 (OFF) 1 (ON)
Key press time	26	Use this setting to select how long a key must be pressed for the input to be accepted. By selecting a longer time, you can prevent settings from being changed by the accidental pressing of a key.	Minimum (current response speed)	1 (Minimum (current response speed)) 2 (0.5sec) 3 (1.0sec) 4 (1.5sec) 5 (2.0sec)
Audible signals volume	27	This sets the volume of beep signals.	short beep	1 (short beep) 2 (long beep) 3 (OFF)
Base setting beep signal	28	Use this to sound a beep when a base setting is selected.	OFF	0 (OFF) 1 (ON)
Number of copies limit	29	Use this setting to select 99 or 999 for the maximum number of copies.	999 copies	1 (99 copies) 2 (999 copies)
Use close paper size	30	When this function is enabled, printing in printer mode will automatically continue using a different size of paper if the specified size of paper runs out in all trays. This feature does not function in copy mode.	OFF	0 (OFF) 1 (ON)
Default tray setting	31	Use this program to select a default tray. This tray is automatically selected each time the power is turned on or each time the machine reverts to the initial settings.	Upper paper tray	1 (Upper paper tray) *3 2 (Lower paper tray) *3 5 (Bypass tray) *3
Default exposure mode	32	Use this program to set "AUTO", "TEXT", or "PHOTO" as the default exposure mode.	AUTO	1 (AUTO) 2 (TEXT) 3 (PHOTO)

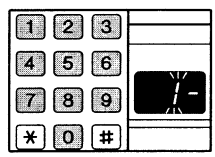
*3 d-Copia is as follows :
1 : Paper tray (factory default)
5 : Bypass tray

2. Setting the user programs

1) Hold down the [Light] key (◐) until the alarm indicators (🚶, ⁂, ☼, ▭, 8/V) blink.
   •The display shows "- -" with the left hyphen blinking.

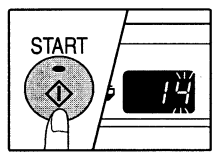


2) Enter the program number with the numeric keys.
   •See "USER PROGRAMS" for the program numbers.
   •The selected program number blinks.
   •For example, to select "Auto clear timer", press the [1] key.

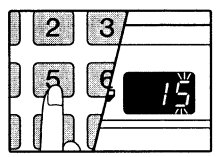


Note: If you enter the wrong number, press the [CLEAR] key ([C]) and then enter the correct number.

3) Press the [START] key (◈).
   •The selected program number stops blinking and lights steadily.
   •The currently selected setting code blinks on the right side of the display.

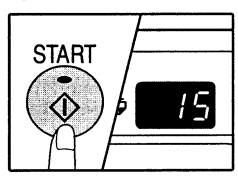


4) Enter the desired setting code by pressing a numeric key.
   •For the setting codes, see "USER PROGRAMS".
   •The selected setting code blinks.
   •For example, to select 90 seconds, press the [5] key.



Note: If you enter the wrong number, press the [CLEAR] key ([C]) and return to step 2).

5) Press the [START] key (◈).
   •The selected setting code stops blinking and lights steadily.



Note: To select a setting for another user program, press the [CLEAR] key ([C]) and then return o step 2).

6) Press the [Light] key (◐) to complete the settings.
   •The alarm indicators (🚶, ⁂, ☼, ▭, 8/V) go off and the display returns to the number of copies display.

[9]TROUBLE CODE LIST

1.Trouble code list

Main code	Sub code	Content
E7	02	LSU trouble
	10	Shading trouble (Black correction)
	11	Shading trouble (White correction)
	12	Shading trouble
	16	Abnormal laser output
F5	02	Copy lamp lighting abnormality
H2	00	Thermistor open
H3	00	Heat roller high temperature detection
H4	00	Heat roller low temperature detection
L1	00	Scanner feed trouble
L3	00	Scanner return trouble
L4	01	Main motor lock detection
	11	Shifter motor trouble
L6	10	Polygon motor lock detection
L8	01	No full wave signal
U2	04	EEPROM read/write error (serial communication error)
	11	Counter check sum error (EEPROM)
	12	Adjustment value check sum error (EEPROM)
CH ON	None	Side door open
CH Blink	None	Developing cartridge not installed

2.Details of trouble codes

Main code	Sub code		Details of trouble
E7	02	Content	LSU trouble
		Detail	The BD signal from the LSU cannot be detected in a certain cycle. (Always OFF or always ON)
		Cause	LSU connector or LSU harness defect or disconnection Polygon motor rotation abnormality Laser beams are not generated. MCU PWB abnormality.
		Check and remedy	Check connection of the LSU connector. Execute SIM 61-03 to check the LSU operations. Check that the polygon motor rotates normally. Check that the laser emitting diode generates laser beams. Replace the LSU unit. Replace the MCU PWB.
	10	Content	Shading trouble (Black correction)
		Detail	The CCD black scan level is abnormal when the shading.
		Cause	Improper connection of the CCD unit flat cable CCD unit abnormality MCU PWB abnormality.
		Check and remedy	Check connection of the CCD unit flat cable. Check the CCD unit."
	11	Content	Shading trouble (White correction)
		Detail	The CCD white scan level is abnormal when the shading.
		Cause	Improper connection of the CCD unit flat cable Dirt on the mirror, the lens, and the reference white plate Copy lamp lighting abnormality CCD unit abnormality MCU PWB abnormality (When occurred in the SPF scan position.) Improper installation of the mirror unit
		Check and remedy	Clean the mirror, lens, and the reference white plate. Check the light quantity and lighting status of the copy lamp (SIM 05-03). Check the MCU PWB.
	12	Content	Shading trouble
		Detail	White correction is not completed in the specified number of operations.
		Cause	CCD unit flat cable connection failure. Dirt on mirrors, lenses, and the reference white plate. Copy lamp lighting abnormality CCD unit abnormality MCU PWB abnormality
		Check and remedy	Clean mirrors, lenses, and the reference white plate. Check the copy lamp light quantity (SIM 05-03) and lighting. Check the CCD unit. Check the MCU PWB.
	16	Content	Abnormal laser output
		Detail	When the laser output is stopped, HSYNC is detected.
		Cause	Laser abnormality MCU PWB abnormality.
		Check and remedy	Check the laser emitting diode operation. Replace the MCU PWB. "

Main code	Sub code		Details of trouble
F5	02	Content	Copy lamp lighting abnormality
		Detail	The copy lamp does not turn on.
		Cause	Copy lamp abnormality Copy lamp harness abnormality CCD PWB harness abnormality.
		Check and remedy	Use SIM 5-3 to check the copy lamp operations. **When the copy lamp lights up.** Check the harness and the connector between the CCD unit and the MCU PWB. **When the copy lamp does not light up.** Check the harness and the connector between the copy lamp unit and the MCU PWB. Replace the copy lamp unit. Replace the MCU PWB. "
H2	00	Content	Thermistor open
		Detail	The thermistor is open. The fusing unit is not installed.
		Cause	Thermistor abnormality Control PWB abnormality Fusing section connector disconnection The fusing unit is not installed.
		Check and remedy	Check the harness and the connector between the thermistor and the PWB. Use SIM 14 to clear the self diagnostic display.
H3	00	Content	Heat roller high temperature detection
		Detail	The fusing temperature exceeds 240C°.
		Cause	Thermistor abnormality Control PWB abnormality Fusing section connector disconnection.
		Check and remedy	Use SIM 5-02 to check the heater lamp blinking operation. **When the lamp blinks normally.** Check the thermistor and its harness. Check the thermistor input circuit on the control PWB. **When the lamp keeps ON.** Check the power PWB and the lamp control circuit on the MCU PWB. Use SIM 14 to clear the self diagnostic display.
H4	00	Content	Heat roller low temperature detection
		Detail	When the fusing temperature is lower than 150C° after 55sec from the start of warming up. When the warming up complete temperature is not reached in 30sec from reaching 150C°. When the fusing temperature is lower than 100C° after 20sec from ready start. When the fusing temperature is lower than 145C° when printing."
		Cause	Thermistor abnormality Heater lamp abnormality Thermostat abnormality Control PWB abnormality
		Check and remedy	Use SIM 5-02 to check the heater lamp blinking operation. **When the lamp blinks normally.** Check the thermistor and its harness. Check the thermistor input circuit on the control PWB. **When the lamp does not light up.** Check for disconnection of the heater lamp and the thermostat. Check the interlock switch. Check the power PWB and the lamp control circuit on the MCU PWB. Use SIM 14 to clear the self diagnostic display.

Main code	Sub code		Details of trouble
L1	00	Content	Scanner feed trouble
		Detail	The scanner does not complete feeding in the specified time.
		Cause	Mirror unit abnormality The scanner wire is disconnected. The origin detection sensor abnormality Mirror motor harness abnormality
		Check and remedy	Use SIM 1-1 to check the mirror reciprocating operations. **When the mirror does not feed.** Check for disconnection of the scanner wire. Check the harness and the connector between the mirror motor and the MCU PWB. Replace the mirror unit. Replace the MCU PWB. **When the mirror does feed.** Use SIM 1-2 to check the mirror home position sensor."
L3	00	Content	Scanner return trouble
		Detail	The scanner does not complete returning in the specified time. The mirror is not in the home position when OC copying is started with the mirror standby in the home position.
		Cause	Mirror unit abnormality Scanner wire disconnection Origin detection sensor abnormality Mirror motor harness abnormality
		Check and remedy	Use SIM 1-1 to check the mirror reciprocating operations. **When the mirror does not return.** Check for disconnection of the scanner wire. Check the harness and the connector between the mirror motor and the MCU PWB. Replace the mirror unit. Replace the MCU PWB. **When the mirror does feed.** Use SIM 1-2 to check the mirror home position sensor.

Main code	Sub code		Details of trouble
L4	01	Content	Main motor lock detection
		Detail	The main motor does not rotate. The motor lock signal is detected for 1sec or more after rotation of the main motor. The motor lock signal is detected for 1sec during rotation of the main motor.
		Cause	Main motor unit abnormality Improper connection or disconnection the main motor and the harness. MCU PWB abnormality
		Check and remedy	Use SIM 25-01 to check the main motor operations. Check connection of the main motor harness/ connector. Replace the main motor. Replace the MCU PWB.
	11	Content	Shifter motor trouble
		Detail	The shifter home position detection signal is not detected when initializing the shifter.
		Cause	Shifter motor abnormality, improper connection or disconnection of the harness, shifter home position sensor abnormality
		Check and remedy	Use SIM 03-11 to check the shifter motor operations. Check connection of the harness/connector of the shifter motor. Replace the shifter motor. Replace the MCU PWB.
L6	10	Content	Polygon motor lock detection
		Detail	The polygon motor does not rotate. The motor lock signal is detected for 6sec after rotation of the polygon motor. The motor lock signal is detected for 1sec during rotation of the polygon motor.
		Cause	Polygon motor unit abnormality Improper connection or disconnection of the polygon motor and the harness. MCU PWB abnormality
		Check and remedy	Use SIM 61-1 to check the polygon motor operations. Check connection of the polygon motor harness/connector. Replace the polygon motor.. Replace the MCU PWB.
L8	01	Content	No full wave signal
		Detail	The zero cross signal is not detected.
		Cause	Power unit abnormality MCU PWB abnormality
		Check and remedy	Check connection of the harness and connectors. Replace the MCU PWB. Replace the power unit.

Main code	Sub code		Details of trouble
U2	04	Content	EEPROM read/write error (Serial communication error)
		Detail	EEPROM access process error
		Cause	EEPROM abnormality
		Check and remedy	Check that the EEPROM is properly set. Use SIM 16 to cancel the trouble. Replace the MCU PWB.
	11	Content	Counter check sum error (EEPROM)
		Detail	Check sum error of the counter area in the EEPROM
		Cause	EEPROM abnormality
		Check and remedy	Check that the EEPROM is properly set. Use SIM 16 to cancel the trouble. Replace the MCU PWB.
	12	Content	Adjustment value check sum error (EEPROM)
		Detail	Check sum error of the adjustment value area in the EEPROM
		Cause	EEPROM abnormality
		Check and remedy	Check that the EEPROM is properly set. Use SIM 16 to cancel the trouble. Replace the MCU PWB.
CH ON	None	Content	Side door open
		Detail	The side door is open.
		Cause	Side door sensor abnormality MCU PWB abnormality
		Check and remedy	Check that all the side doors are closed. Replace the MCU PWB.
CH Blink	None	Content	Developing cartridge not installed
		Detail	The developing cartridge is not installed. Communication with the CRUM cannot be made in initial check of the CRUM.
		Cause	Developing unit disconnection MCU PWB abnormality CRUM chip abnormality
		Check and remedy	Check installation of the developing unit. Replace the MCU PWB.

[10] MAINTENANCE

1. Maintenance table

X:Check(Clean, adjust, or replace when required.) O:Clean ▲:Replace △:Adjust ☆:Lubricate

Unit name	Part name		When calling	50K	100K	150K
Drum peripheral	OPC drum		-	▲	▲	▲
	Cleaning blade		-	▲	▲	▲
	Side seal F/R		X	X	X	X
	MC unit		X	▲	▲	▲
	(MC charging electrode)		-	(▲)	(▲)	(▲)
	(MC grid)		-	(▲)	(▲)	(▲)
	(MC case)		-	(▲)	(▲)	(▲)
	Transfer wire		O	O	O	O
	Transfer paper guide		O	O	O	O
	MC guide sheet (Cleaning blade attached)		-	▲	▲	▲
	Drum fixing plate B		X	▲	▲	▲
	Process frame unit		X	X	X	▲
	Discharge holder		O	O	O	O
Developing section	Developer		-	▲	▲	▲
	DV seal		-	X	X	▲
	DV under seal		-	-	-	▲
	DV side seal		-	X	X	▲
	Side Mylar		-	-	-	▲
Optical section	Lamp unit	Reflector	O	O	O	O
		Mirror	O	O	O	O
	No.2/3 mirror unit	Mirror	O	O	O	O
		Pulley	X	X	X	X
	CCD peripheral	Lens	O	O	O	O
	Glass	Table glass	O	O	O	O
		White Plate	O	O	O	O
	Other	Drive wire	X	X	X	X
		Rail	X☆	X☆	X☆	X☆
		Document cover	O	O	O	O
		Document size sensor	O	O	O	O
LSU		Dust-proof glass	O	O	O	O
Paper feed section	Multi paper feed section	Take-up roller(manual / SPF)	O	O	O	O
		Paper feed roller	O	O	O	O
		Spring clutch	O☆	O☆	O☆	O☆
Paper transport section		PS roller	O	O	O	O
		Transport (paper exit) rollers	O	O	O	O
		Spring clutch	O☆	O☆	O☆	O☆
Fusing section		Upper heat roller	O	O	O	▲
		Pressure roller	O	O	O	O
		Pressure roller bearing	X	X	X	O☆
		Upper separation pawl	X	X	X	O
		Lower separation pawl	X	X	X	O
		Cleaning pad	X	X	X	▲
Drive section		Gears	X☆	X☆	X☆	X☆
		Belts	X	X	X	O
Paper exit section		Ozone filter*1	X	X	X	X

*1:Recommendable replacement time:50K(Letter,5%print)

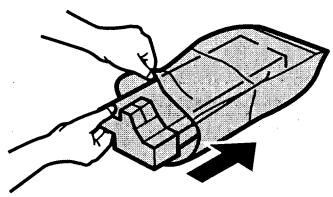
2. Maintenance display system

Toner	Life	16K	
	Remaining quantity	NEAR EMPTY About 10%	EMPTY
	LED	ON	Flash
	Machine	Operation allowed	Stop
Developer	Life	50K	
	LED	ON at 50K of the developer count	
	Machine	Selection is available between Not Stop and Stop by Service Simulation (SIM 26-37) Setup. (If Stop is selected, the LED will flash and stop at 50K.) * Default: Not Stop * Clear: SIM 42-1	
Maintenance	LED	Selection is available among 50K, 25K, 10K, 7.5K, 5K, and free (no lighting) with SIM 21-1. * Default: 50K * Clear: SIM 20-1	
	Machine	Not stop	

3. Note for replacement of consumable parts

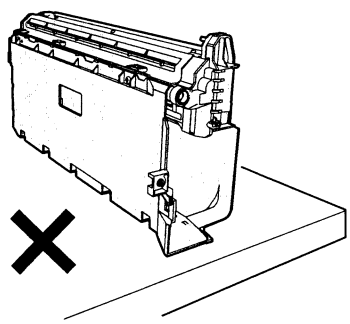
A. Toner cartridge

When a waste toner cartridge is removed from the machine, it must be put in a polyethylene bag to avoid scattering of toner.

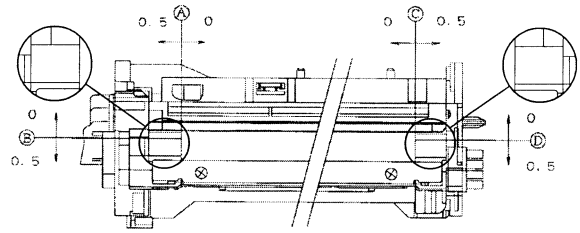


B. DV cartridge

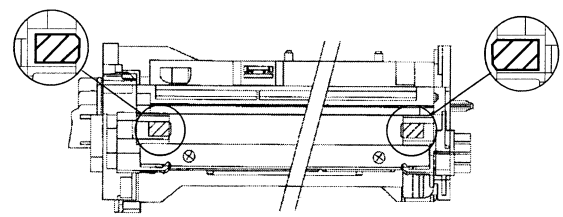
Do not shake or put up the developer cartridge. Otherwise developer may scatter.



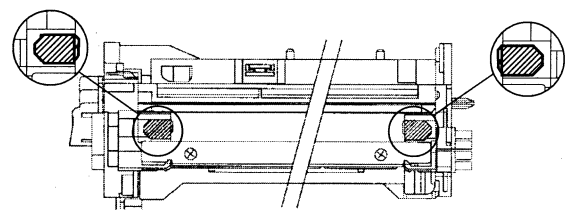
C. DV seal attachment procedure



1) When attaching the DV side Mylar, check the position shown in the figure below and attach it properly.



2) When attaching the DV side sheet, check the position shown in the figure below and attach it properly.
(First of all, attach the DV side Mylar.)



* Be sure to attach the DV side sheet so that the notch is on the outside.

[11] DISASSEMBLY AND ASSEMBLY

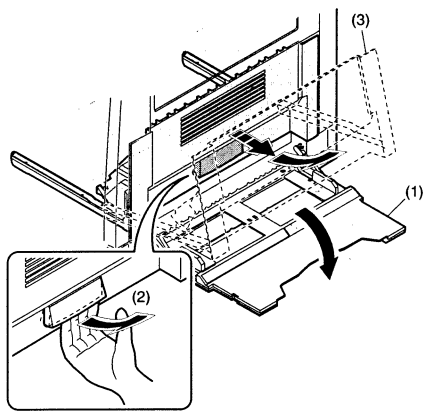
WARNING Before performing the disassembly procedure, be sure to remove the power cord to prevent against an electric shock.

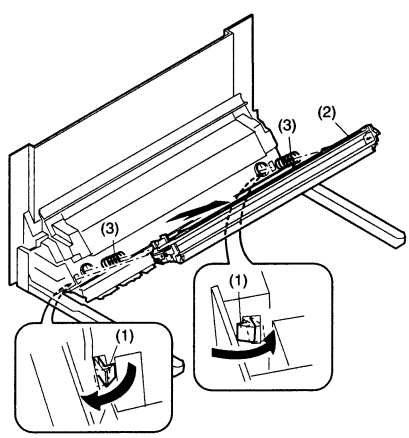
No.	Item
1	High voltage section/Duplex transport section
2	Optical section
3	Fusing section
4	Paper exit section
5	MCU
6	Optical frame unit
7	LSU
8	Tray paper feed section/Paper transport section
9	Manual multi paper feed section
10	Power section
11	Developing section
12	Process section
13	Others

1. High voltage section/Duplex transport section

No.	Content
A	Transfer charger unit
B	Charger wire
C	Duplex transport section

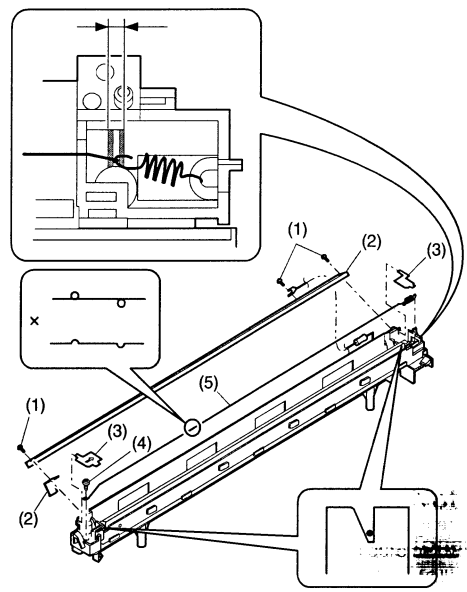
A. Transfer charger unit



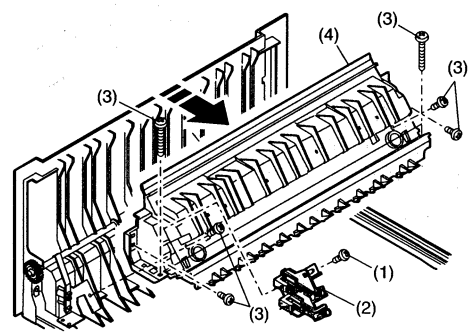


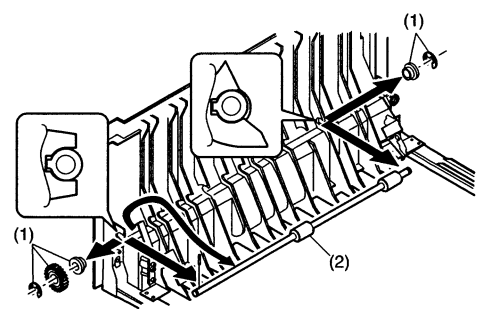
B. Charger wire

Installation: The spring tip must be between two reference ribs.
•The charger wire must be free from twist or bending.
•Be sure to put the charger wire in the V groove.



C. Duplex transport section





2. Optical section

Note: When disassembling or assembling the optical unit, be careful not to touch the mirror and the reflector.

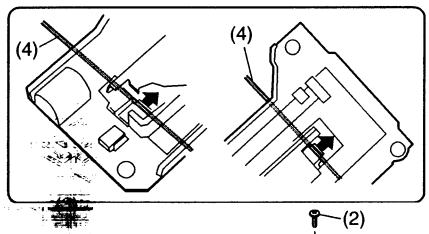
No.	Content
A	Copy lamp unit
B	Inverter PWB for copy lamp
C	Copy lamp
D	Lens unit
E	Wire

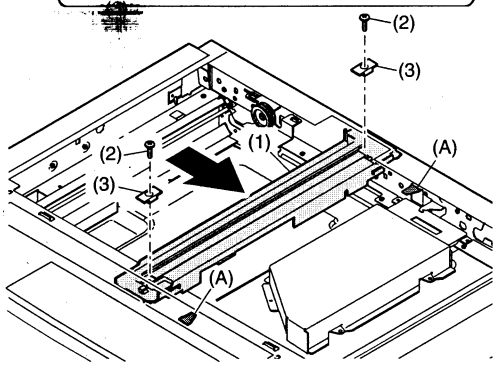
A. Copy lamp unit

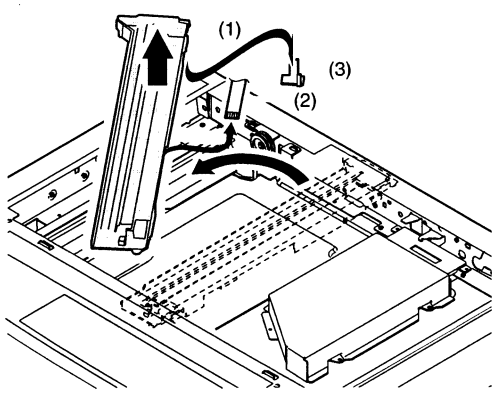
Disassembly: Be sure to put No. 2/3 mirror unit to the positioning plate (A).

Assembly: Put the notched surface of wire holder (3) downward, tighten temporarily, and install.

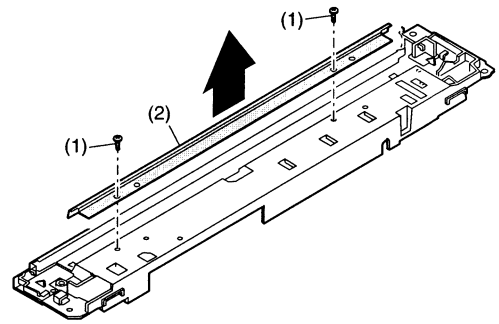
Adjustment: Main scanning direction distortion balance adjustment

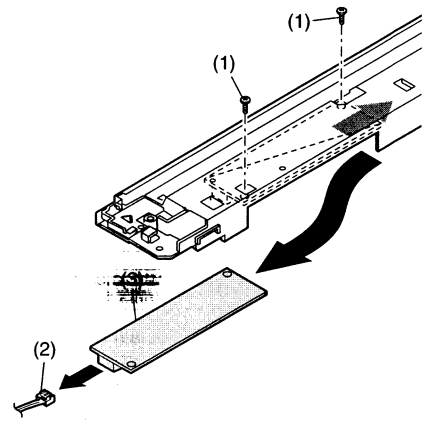




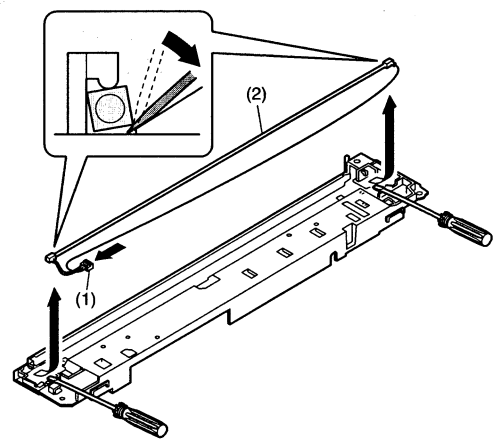


B. Inverter PWB for copy lamp





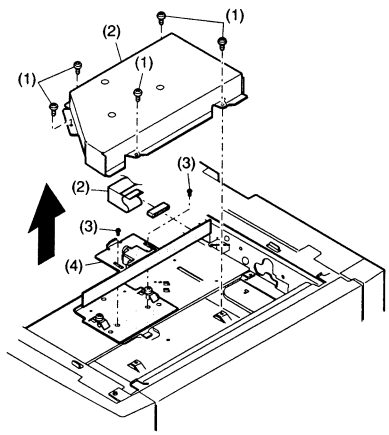
C. Copy lamp



D. Lens unit

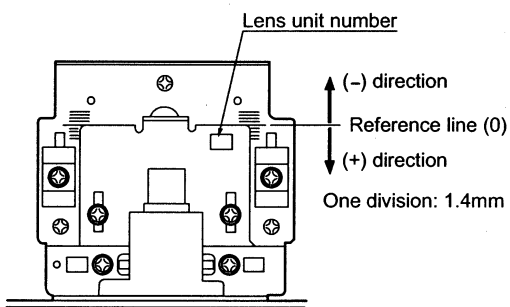
Note: Do not remove screws which are not indicated in the figure. If the height of the base plate is changed, it cannot be adjusted in the market.

Note: The CCD/lens unit is factory-adjusted before shipping. Since these adjustments cannot be performed in the market. Never touch the screws other than screw 2) of the CCD/lens unit.



Lens unit attachment

<1>Attach the lens unit so that the lens unit number on the lens adjustment plate is aligned with the scribe line on the base plate.



	CCD adjustment value
+4 scales	5.0~
+3 scales	3.6~4.9
+2 scales	2.2~3.5
+1 scale	0.8~2.1
Reference	-0.6~0.7
-1 scale	-2.0~ -0.7
-2 scales	-3.4~ -2.1
-3 scales	-4.8~ -3.5
-4 scales	~ -4.9

<2>Make a sample copy at the above position, and measure the magnification ratio.

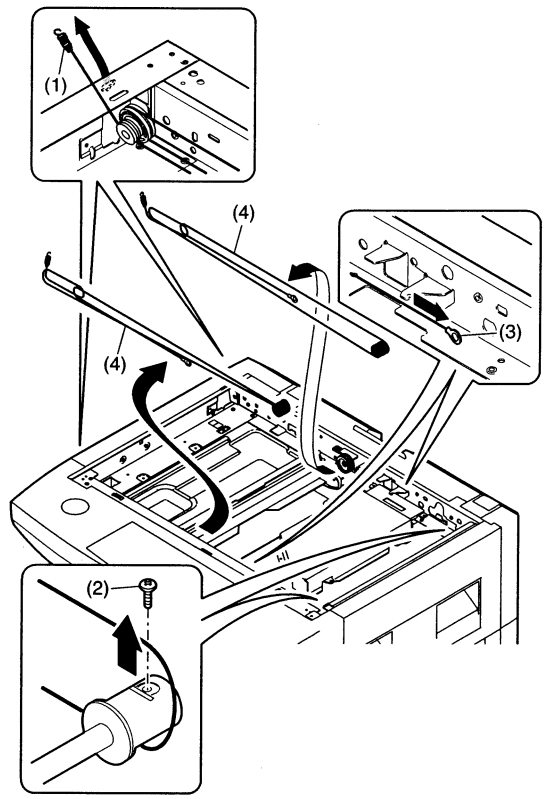
<3>Change the installing position in the horizontal direction to adjust the magnification ratio.

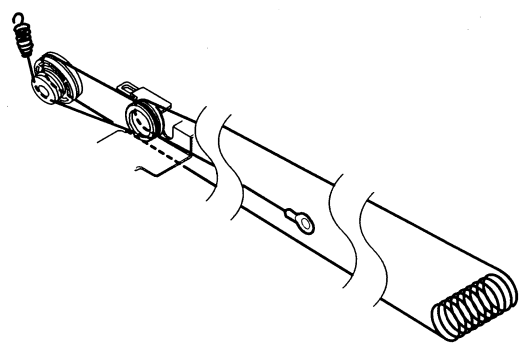
- When the copy image is longer than the original, shift to the positive (+) direction.
- When the copy image is shorter than the original, shift to the negative (-) direction.

* 1 scale of the scribed line corresponds to 0.34% of magnification ratio.

* If this adjustment is not satisfactory, make a fine adjustment with SIM 48-2.

E. Wire

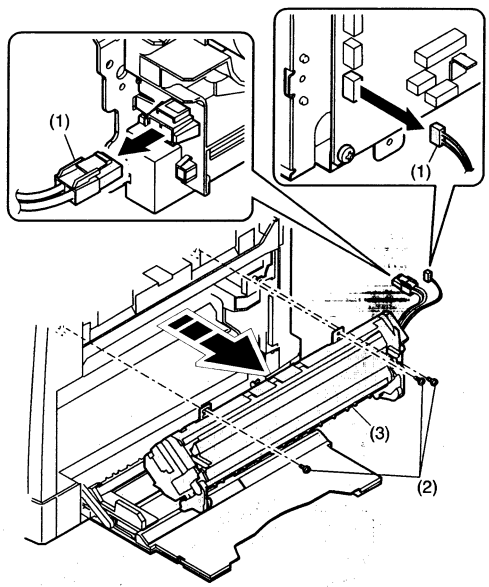




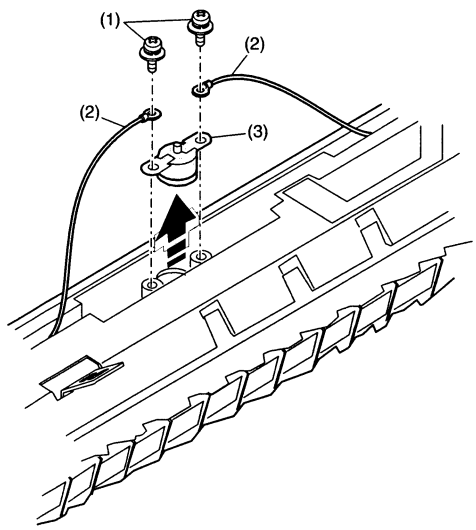
3. Fusing section

No.	Contents
A	Fusing unit
B	Thermostat
C	Thermistor
D	Heater lamp
E	Upper heat roller
F	Separation pawl
G	Lower heat roller
H	Separation pawl
I	Cleaning pad

A. Fusing unit removal

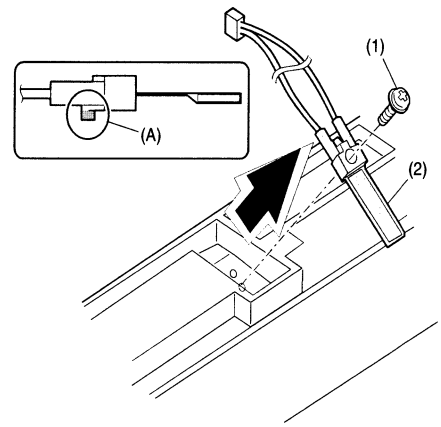


B. Thermostat



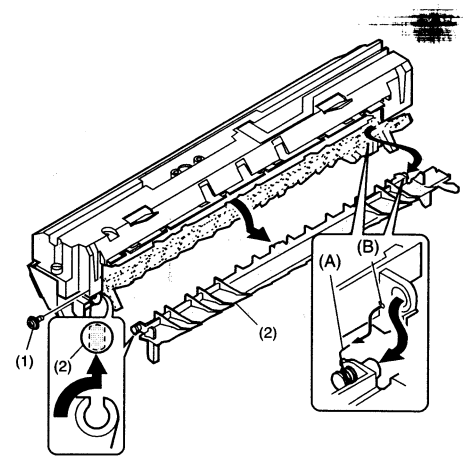
C. Thermistor

Installation: When installing the thermistor, be sure to face the installing projection (A) toward the installing surface.
Check that the thermistor is in contact with the upper heat roller.

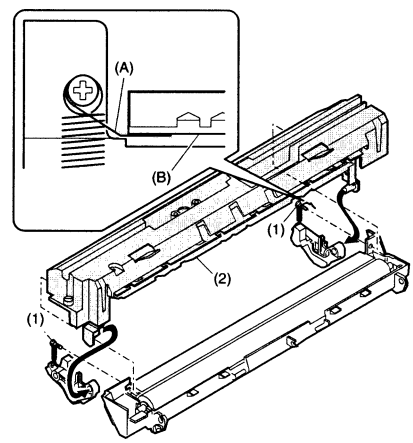


D. Heater lamp

Assembly: Insert the spring (A) into the hole (B) in the fusing frame.

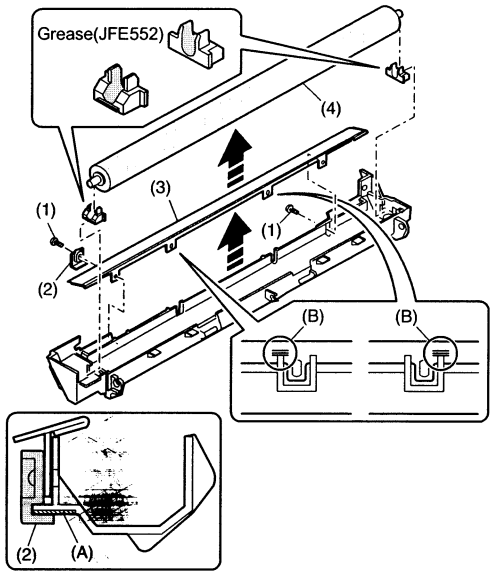


Assembly: Put the paper guide earth spring (A) under the paper guide (B) before fusing.

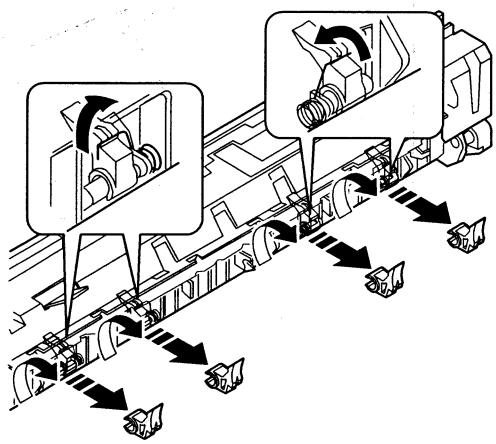


G. Lower heat roller

Assembly: When installing the paper guide (3) before fusing, fix the paper guide fixing plate with screws temporarily so that the paper guide fixing plate (2) is in contact with the frame bottom under fusing (A). Set the paper guide (3) before fusing to the bottom line of the positioning reference (B), and tighten the screw firmly.



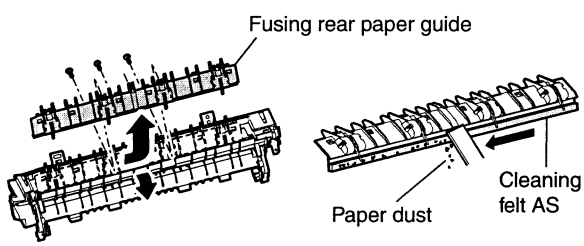
H. Separation pawl



I. Cleaning pad

How to clean paper dust on the fuser cleaning felt.

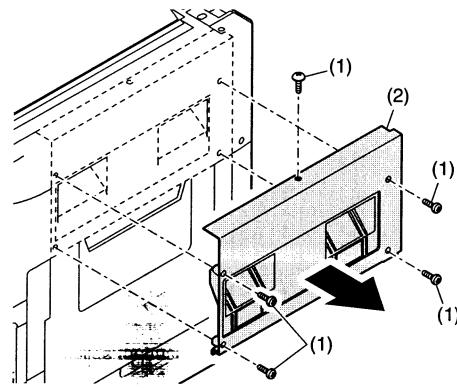
Remove Fusing rear paper guide from Fusing unit during every periodic maintenance (50K) and clean the collected paper dust using a ruler or other straight-edge device.
Replace the cleaning felt at 150k or earlier if damaged.

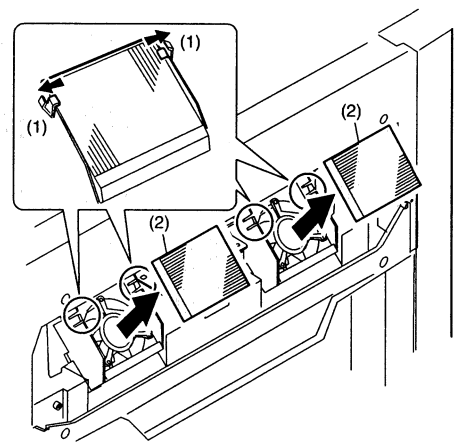


4. Paper exit section

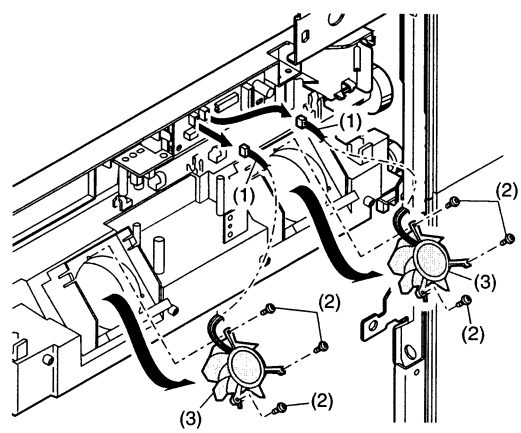
No.	Content
A	Ozone filter
B	Cooling fan
C	Paper exit unit
D	Paper exit sensor / duplex sensor
E	Transport roller
F	Paper exit roller
G	Paper exit interface P.W.B.

A. Ozone filter

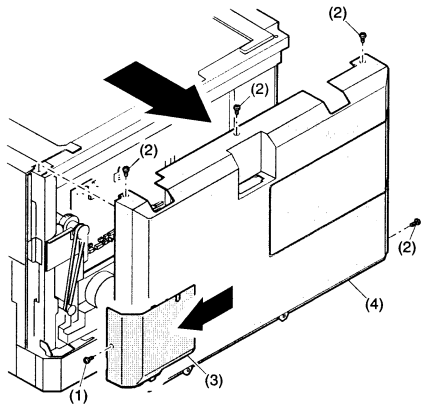


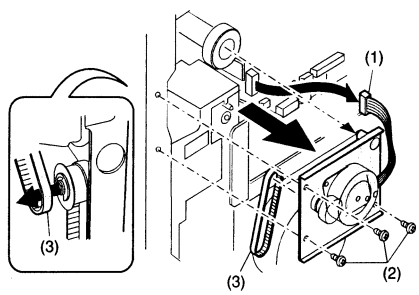


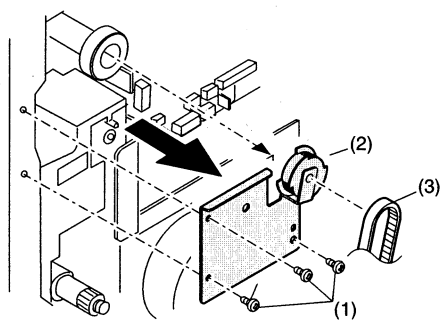
B. Cooling fan

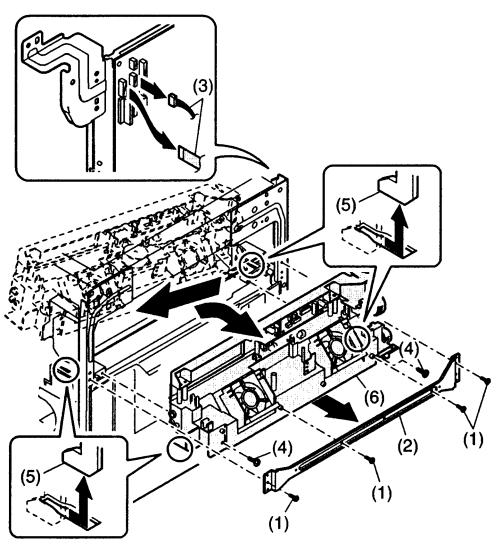


C. Paper exit unit





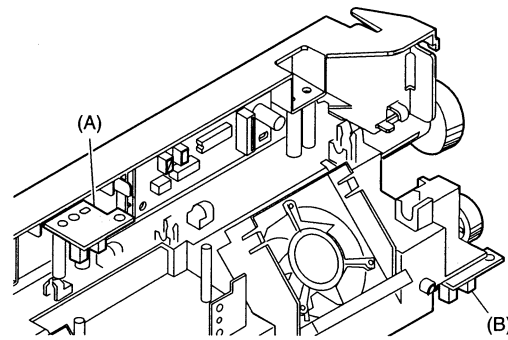




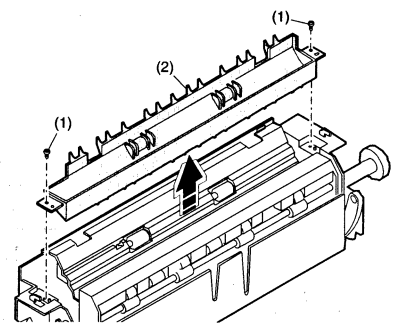
D. Paper exit sensor / duplex sensor

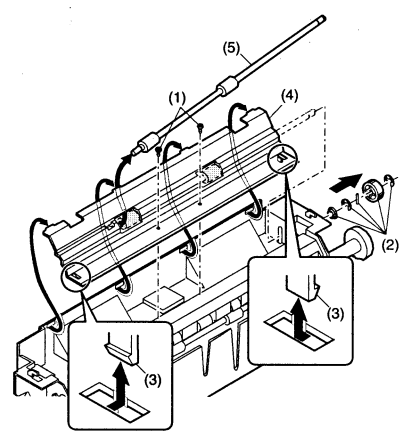
(A) Exit sensor

(B) Duplex sensor



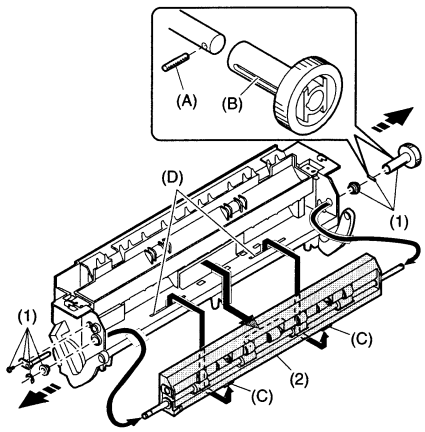
E. Transport roller

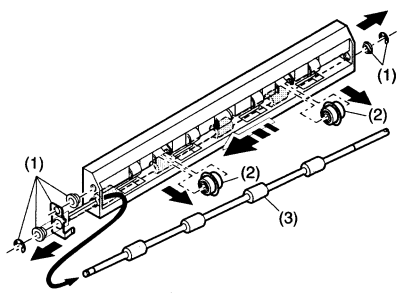




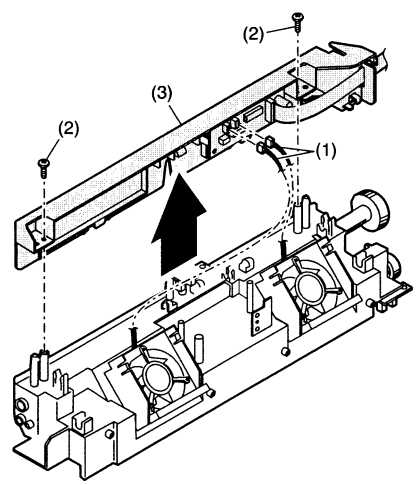
F. Paper exit roller

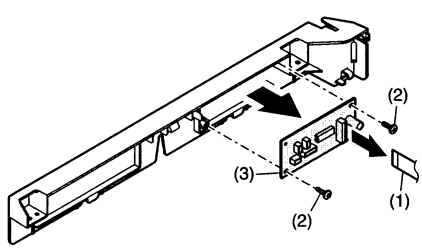
Assembly: Insert the spring pin so that the waveform (A) of the spring pin faces in the longitudinal direction of the paper exit drive gear long hole (B).<R>Be sure to insert two ribs (C) into the groove (D).





G. Paper exit interface P.W.B.



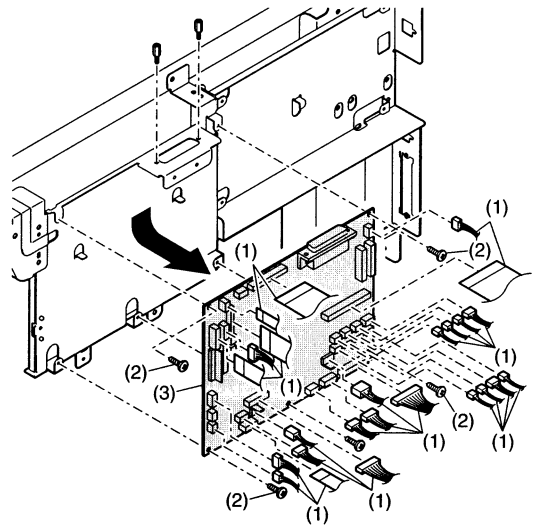


5. MCU

No.	Content
A	MCU disassembly

A. MCU disassembly

Note: When replacing the MCU PWB, be sure to replace the EEPROM of the MCU PWB to be replaced.



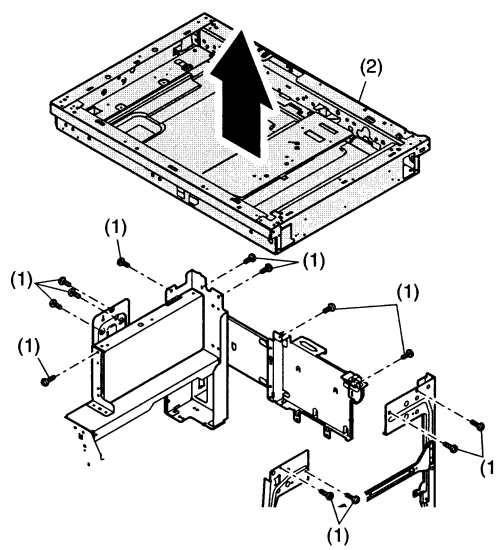
Note: When replacing the MCU PWB, be sure to restore the original jumper conditions.

6. Optical frame unit

No.	Content
A	Optical frame unit

A. Optical frame unit

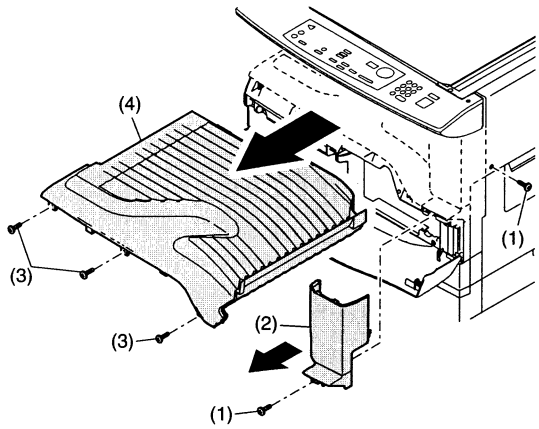
Installation: Install the optical unit in the sequence shown above.

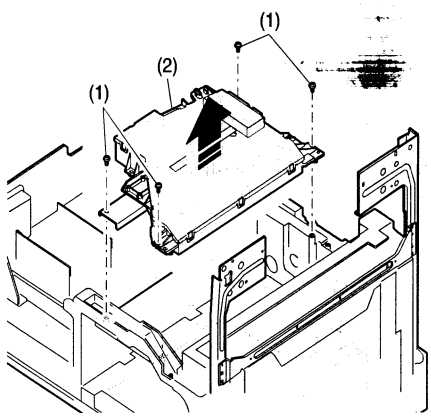


7. LSU

No.	Content
A	LSU unit

A. LSU unit

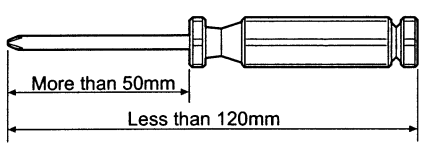




Note: Do not disassemble the LSU.
Note: When replacing the LSU, be careful not to touch the dust-shield glass.

Adjustment:
- Image lead edge position adjustment
- Image left edge position adjustment
- Paper off-center adjustment

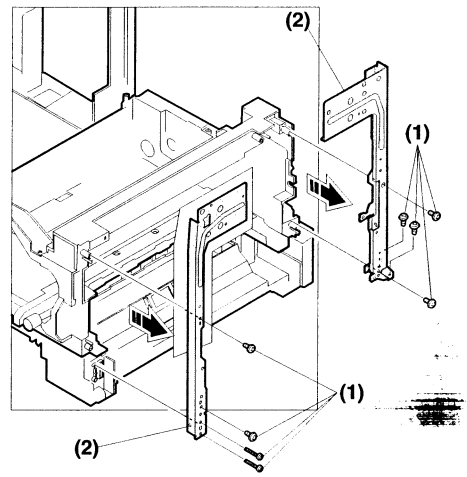
•Size of the screwdriver for removing the LSU



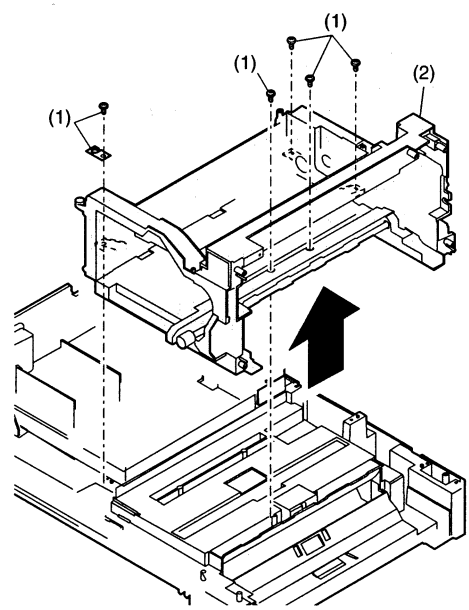
8. Tray paper feed section/Paper transport section

No.	Content
A	Middle frame unit
B	Drive unit
C	Solenoid (paper feed solenoid,, resist roller solenoid)
D	Resist roller clutch / Resist roller
E	Paper feed clutch/Paper feed roller (Semi-circular roller)

A. Middle frame unit

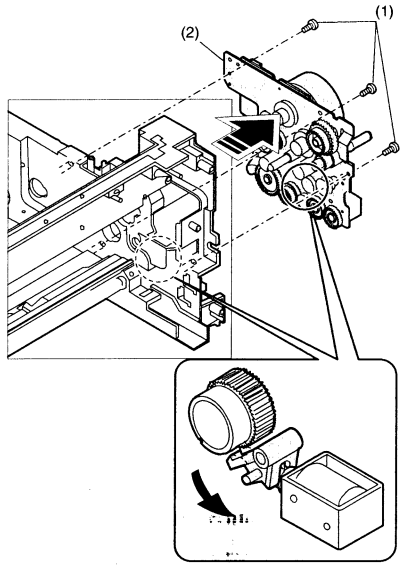


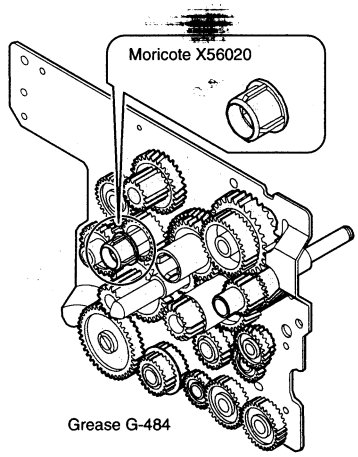
Assembly: Do not miss the door lock pawl.



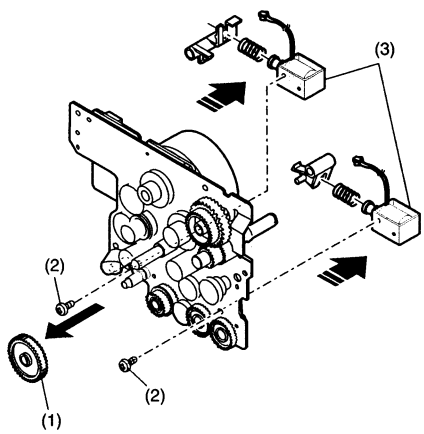
B. Drive unit

Assembly: Move down the clutch pawl as shown below, and avoid the clutch and install.

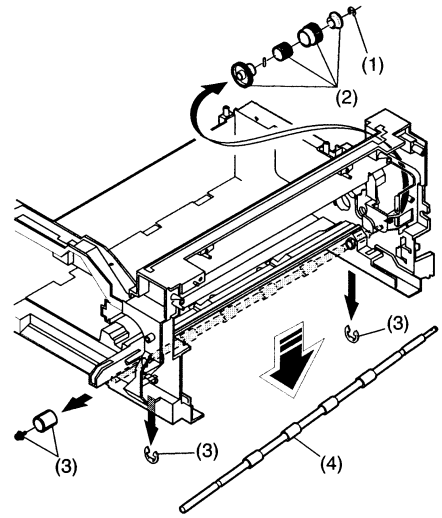




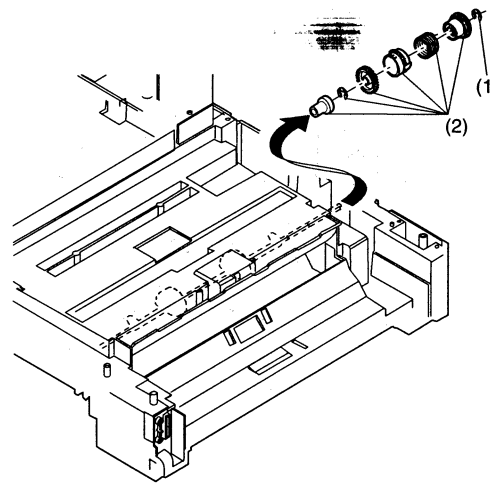
C. Solenoid
(paper feed solenoid, resist roller solenoid)



D. Resist roller clutch/Resist roller



E. Paper feed clutch/Paper feed roller (Semi-circular roller)

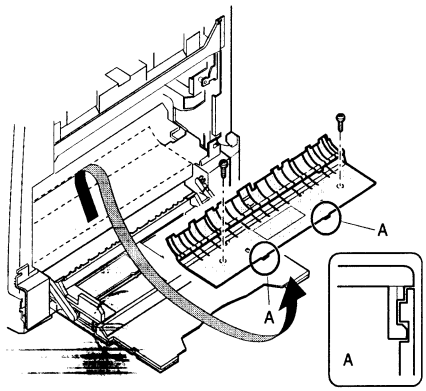


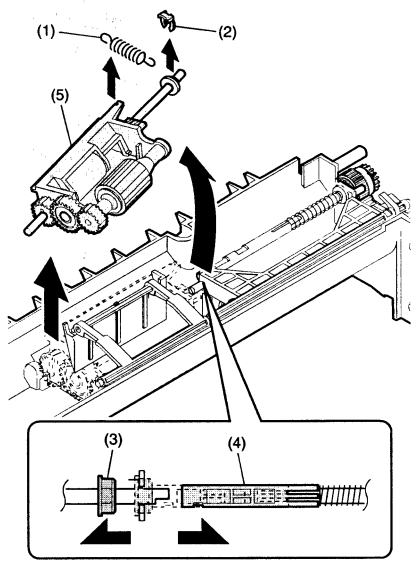
9. Manual multi paper feed section

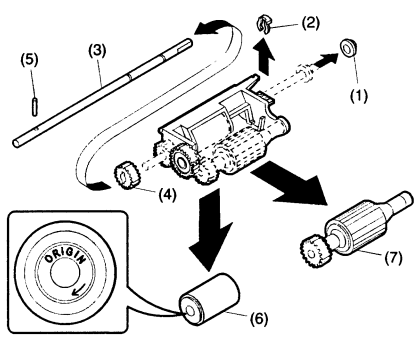
No.	Content
A	Manual transport roller/Manual paper feed roller
B	Manual multi paper feed
C	Manual feed solenoid
D	Manual transport clutch
E	Pressure plate unit
F	Manual paper feed clutch

A. Manual transport roller/Manual paper feed roller

Note: Push the lever at the right edge of the multi frame cover to the right upper side and remove it.

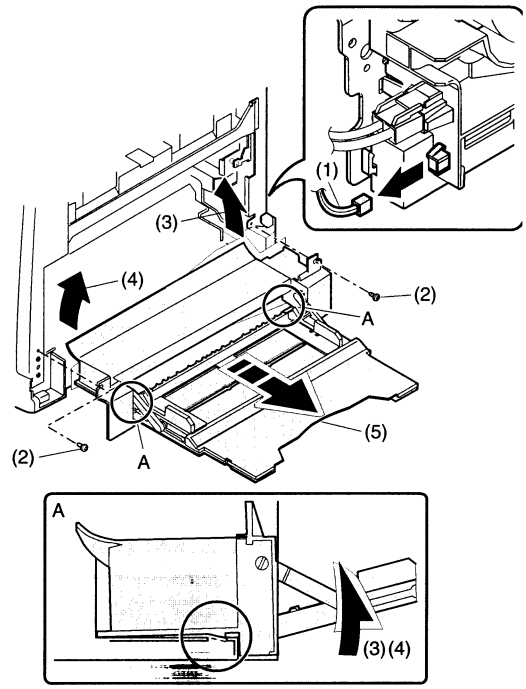




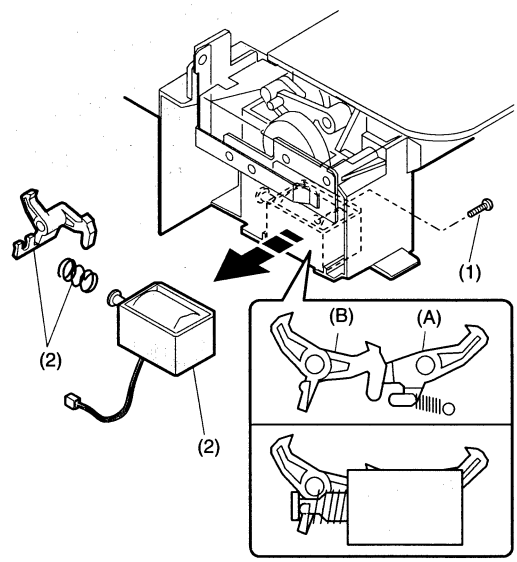


Installation: Be careful of the installing direction of the manual transport roller (6)

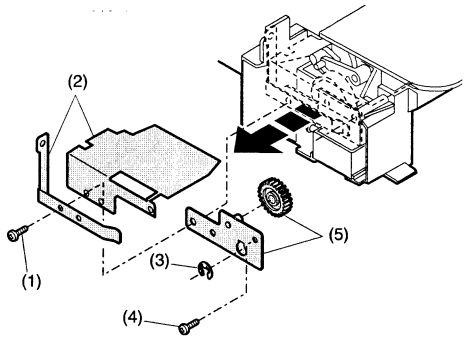
B. Manual multi paper feed

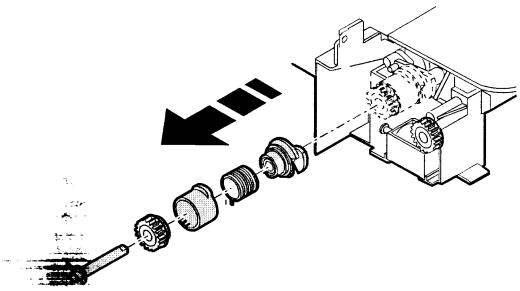


C. Manual feed solenoid

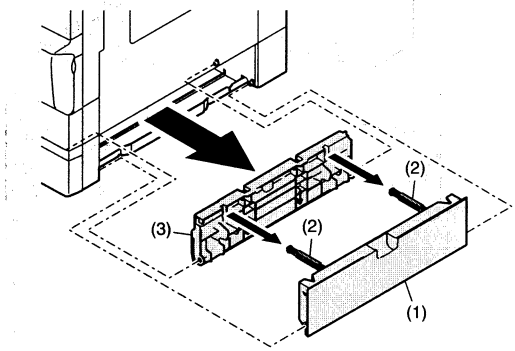


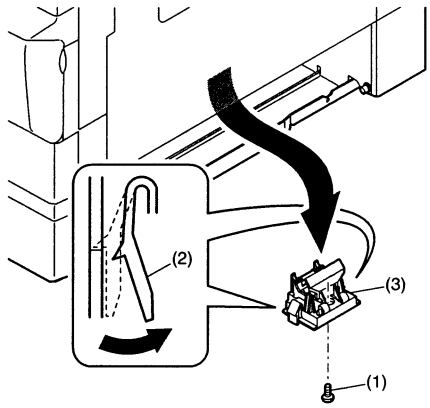
D. Manual transport clutch





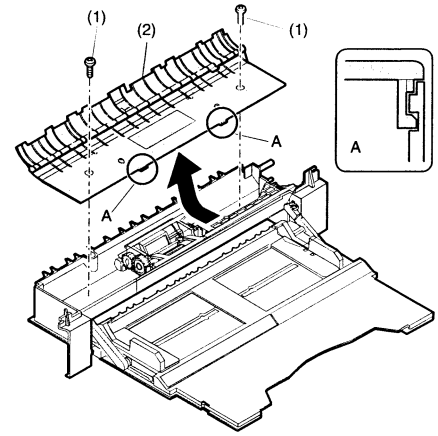
E. Pressure plate unit

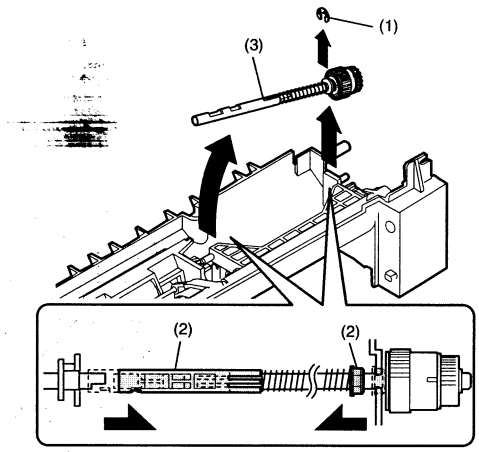


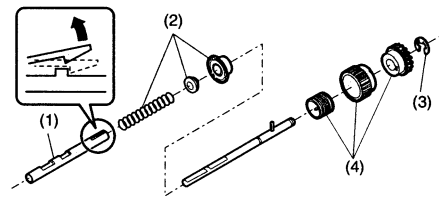


F. Manual paper feed clutch

Note: Push the lever at the right edge of the multi frame cover to the right upper side and remove it.



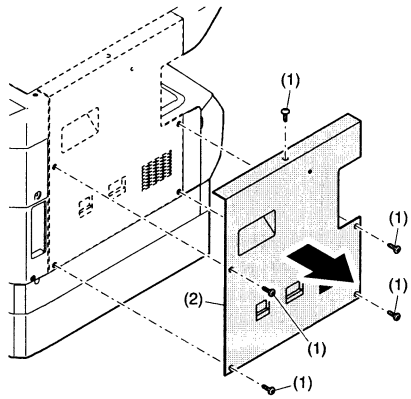


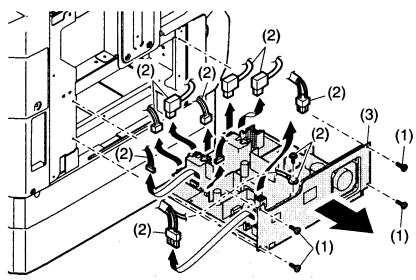


10. Power section

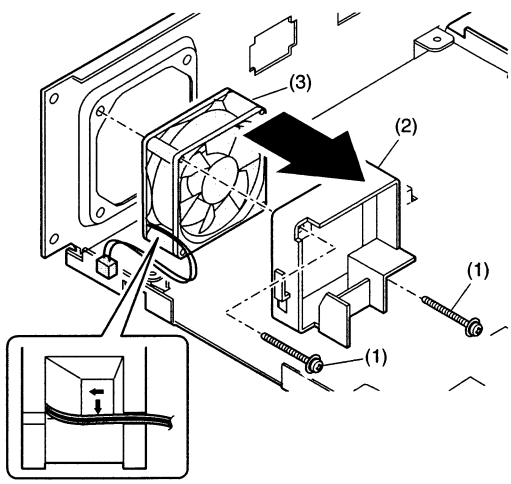
No.	Content
A	Power unit
B	Power fan
C	High voltage P.W.B.
D	Power P.W.B.
E	Power switch

A. Power unit

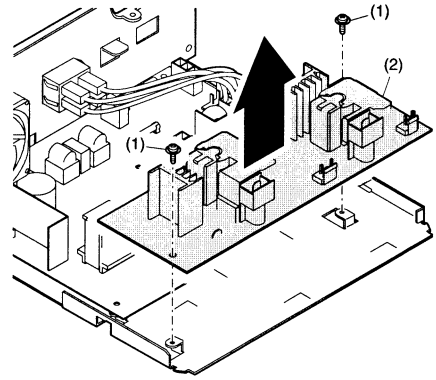




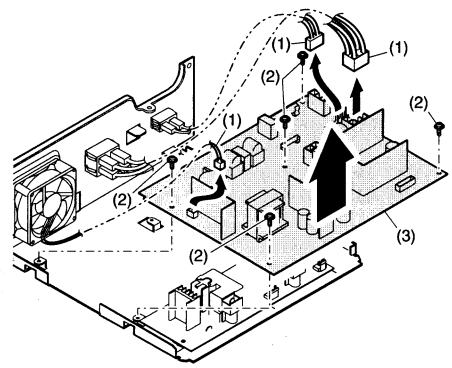
B. Power fan



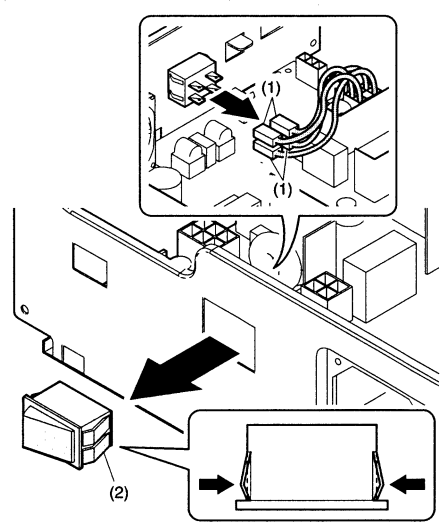
C. High voltage P.W.B.



D. Power P.W.B.



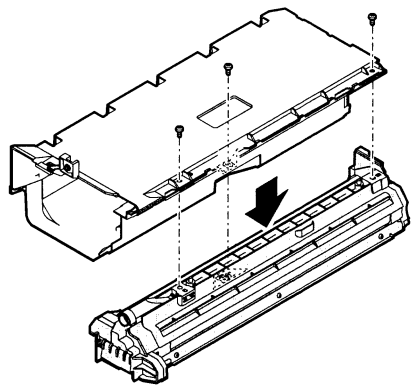
E. Power switch



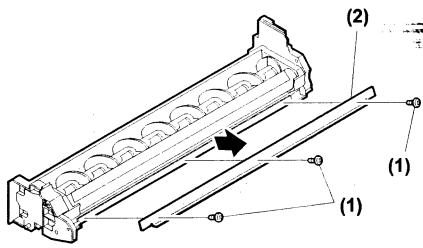
11. Developing section

No.	Contents
A	Developing box
B	Developing doctor
C	MG roller

A. Developing box

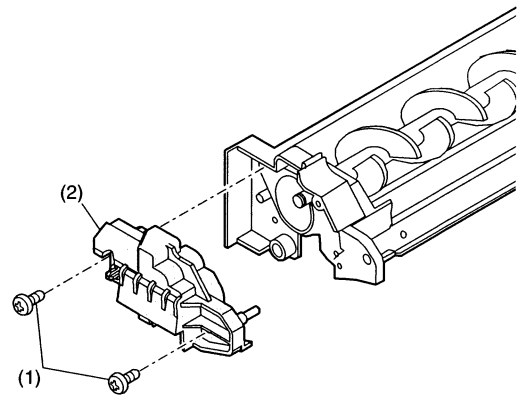


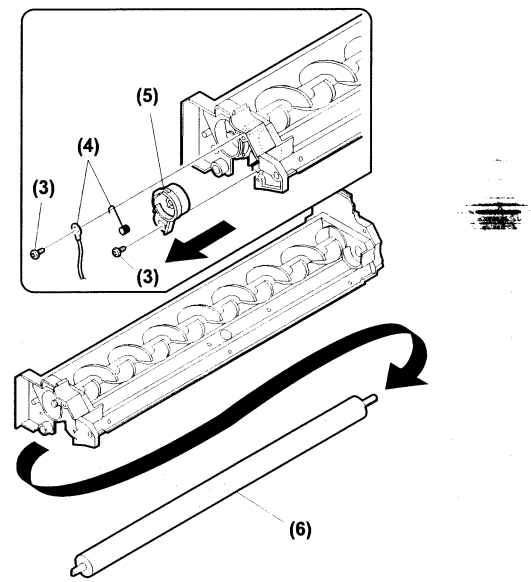
B. Developing doctor



Adjustment: Developing doctor gap adjustment

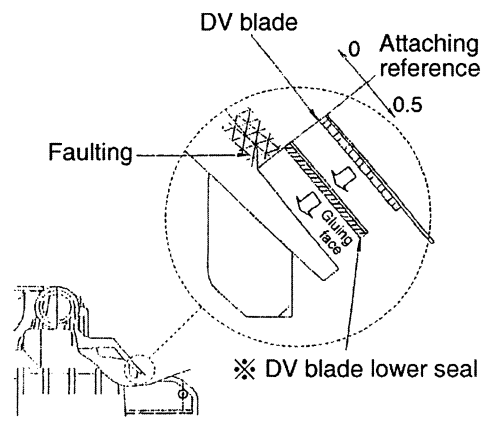
C. MG roller





Adjustment: MG roller main pole position adjustment

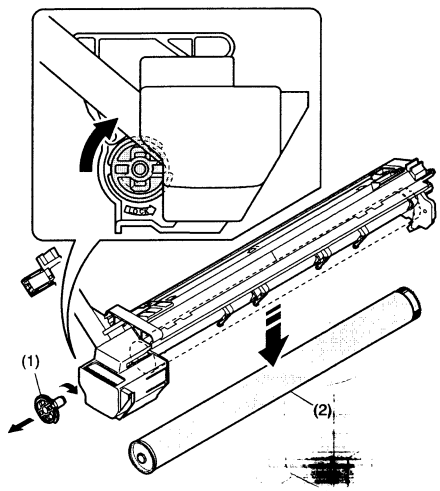
Note: Attach it to fit with the attachment reference when replacing the DV blade.



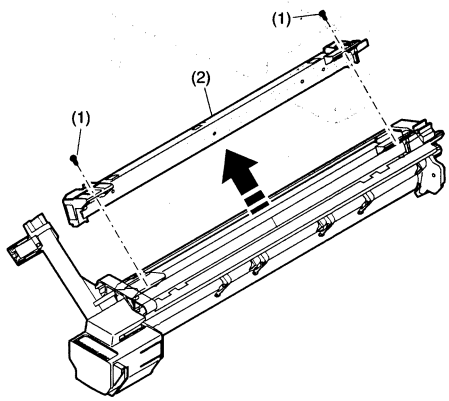
12. Process section

No.	Contents
A	Drum unit
B	Main charger unit
C	Cleaning blade

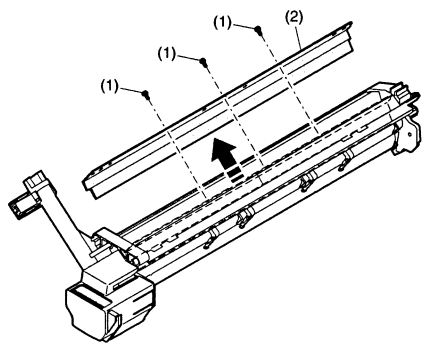
A. Drum unit



B. Main charger unit



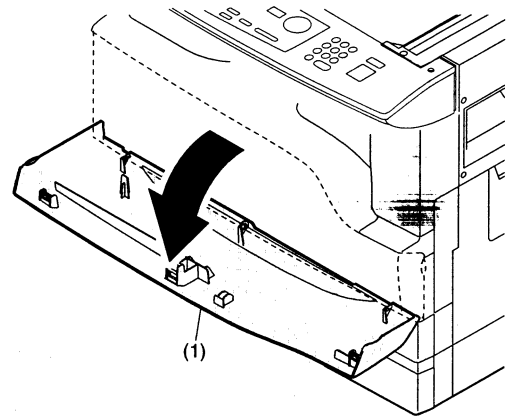
C. Cleaning blade

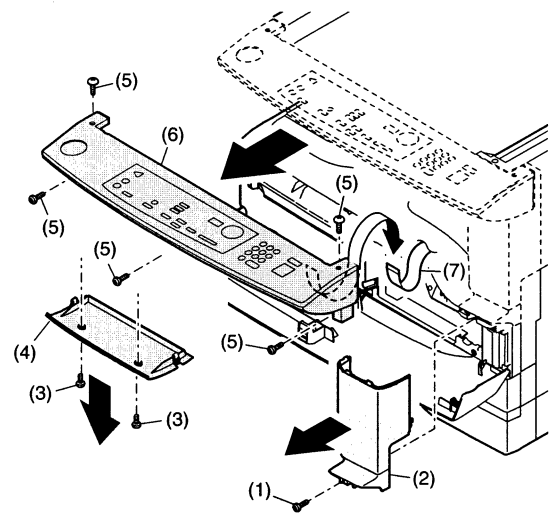


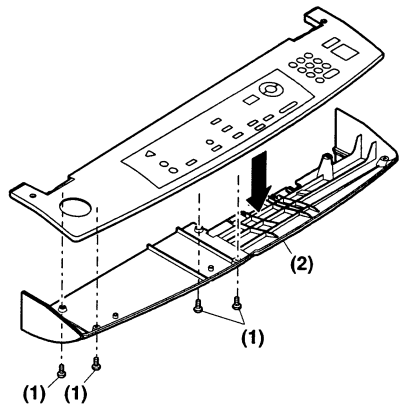
13. Others

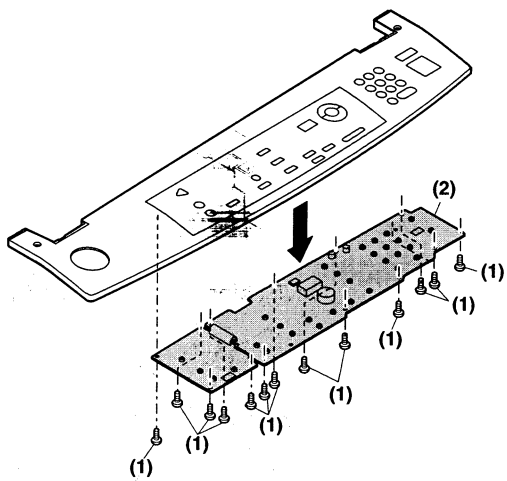
No.	Contents
A	Operation P.W.B.
B	Tray interface P.W.B.
C	2nd tray paper entry sensor / Paper empty sensor
D	2nd tray paper feed solenoid / Transport solenoid
E	2nd tray transport clutch
F	2nd tray transport roller
G	2nd tray paper feed clutch
H	2nd tray paper feed roller
I	Main motor
J	I/F P.W.B.
K	Paper entry sensor
L	Paper empty sensor
M	Paper feed roller

A. Operation P.W.B.

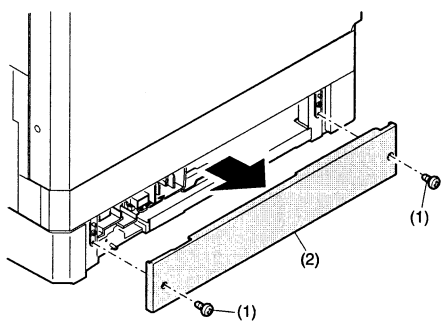


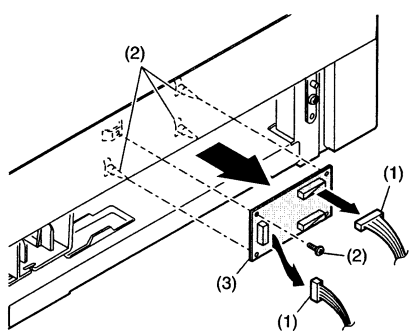




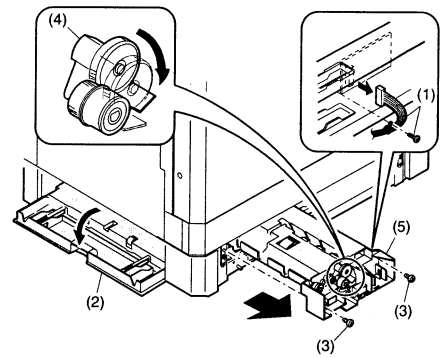


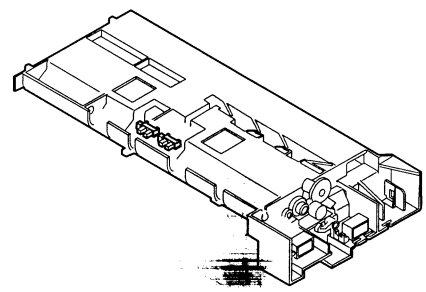
B. Tray interface P.W.B.



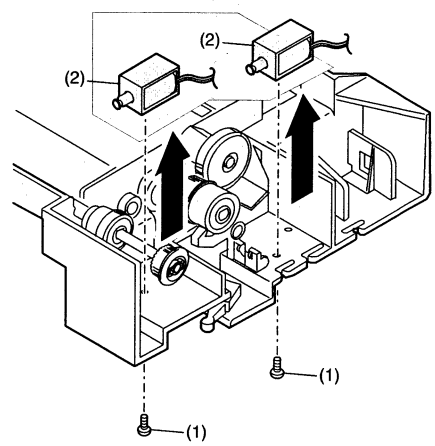


C. 2nd tray paper entry sensor / Paper empty sensor

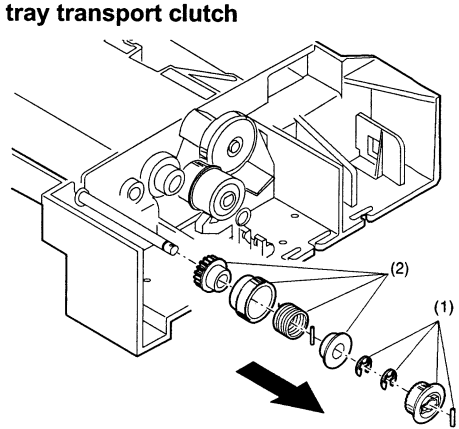




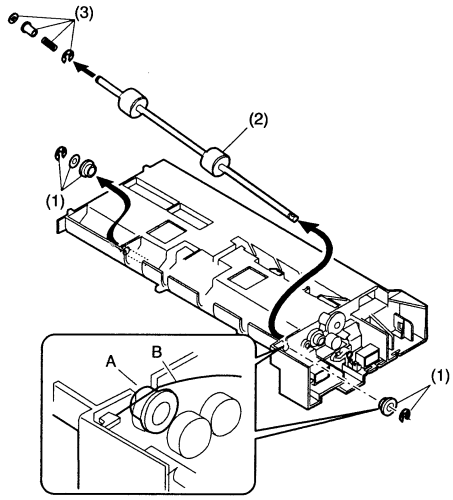
D. 2nd tray paper feed solenoid / Transport solenoid



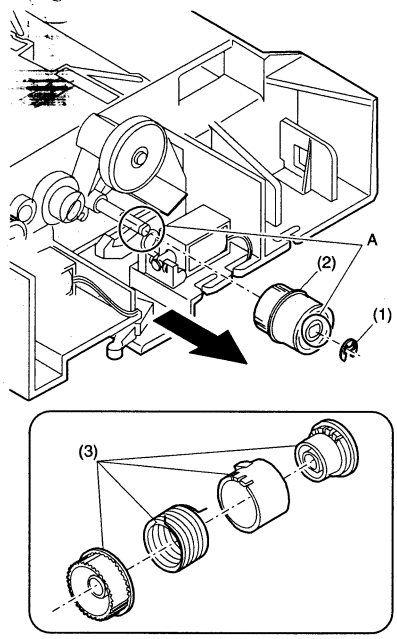
E. 2nd tray transport clutch



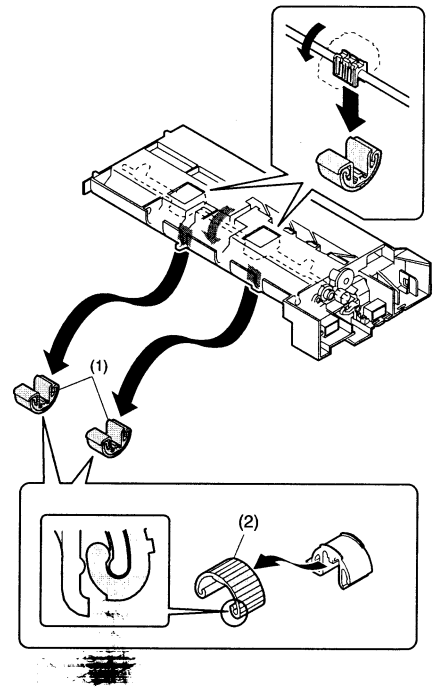
F. 2nd tray transport roller



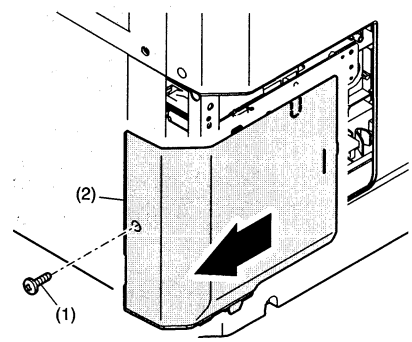
G. 2nd tray paper feed clutch

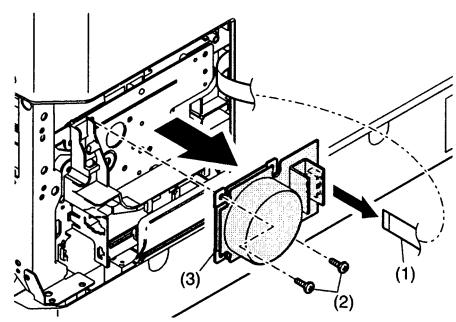


H. 2nd tray paper feed roller

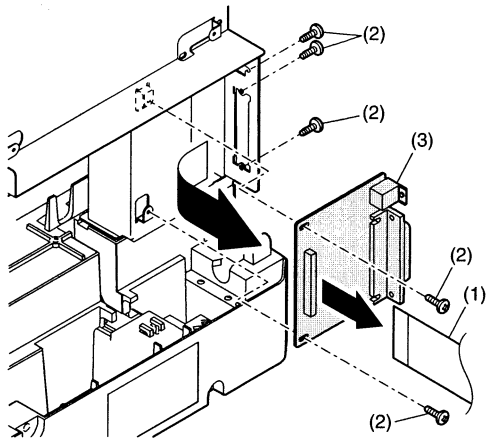


I. Main motor

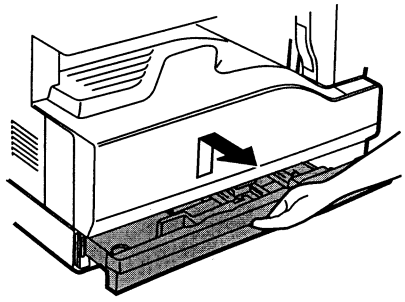


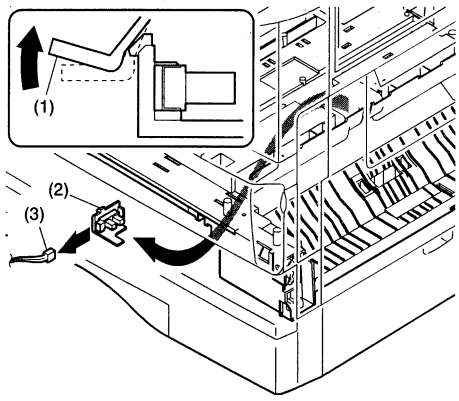


J. I/F P.W.B.

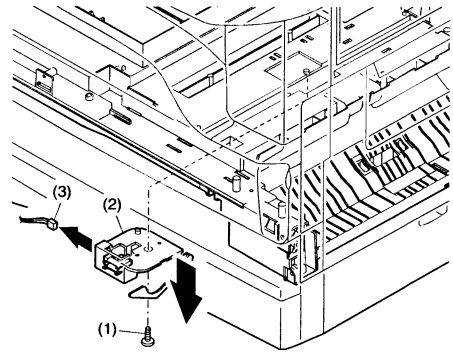


K. Paper entry sensor

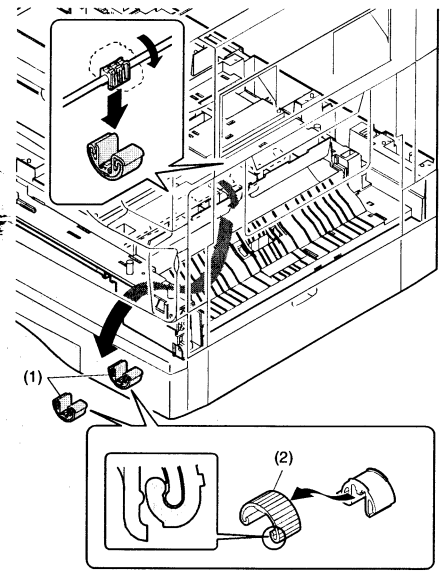




L. Paper empty sensor



M. Paper feed roller



* When removing the paper feed roller, operate the paper feed clutch with SIM 6-1, and keep the paper feed roller down as shown in the figure above for operation.

[12] FLASH ROM VERSION UPGRADE PROCEDURE

1. Preparation

Write the download data (the file with the extension dwl) to the main body of d-Copia 16W/20W.

1) Necessary files for download
(Create a folder containing the following files on the PC to be used for the ROM upgrade.)
• Maintenance.exe (Maintenance software)
• ProcMode IL.mdl
• ProcMode IL.ini
• ProcMode IL.fmt
In the "Drivers" folder:
•Drivers\2kXP\Mainte.inf
•Drivers\ME\Mainte.inf
•Drivers\ME\UsbScan.sys
•Drivers\9x\Mainte.inf
•Drivers\9x\SCusbscn.sys

<Note>
•The Download file(***.dwl) and the like that are to be downloaded should be copied, in advance, into the folder containing the maintenance program.
•When creating a folder for the maintenance tool in the PC, be sure that no lengthy folder name is included in the path.

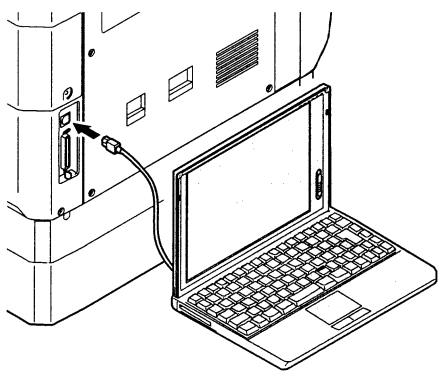
(Example)
Incorrect: c:\Maintenance Download Tool
Correct: c:\Maintenance Tool

2) Install the USB joint maintenance program
(See 3. Installation procedure on page 12-2).

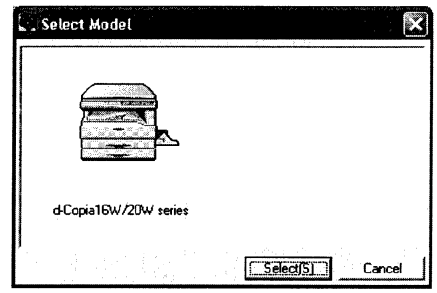
2. Download procedure

1) Main body side:
Executable by performing the Service Simulation No. 49-01 (Flash Rom program-writing mode).
(A word "d" appears on the operation panel to denote the download mode status.)

2) Connect the PC and the main body with the download cable (USB cable).

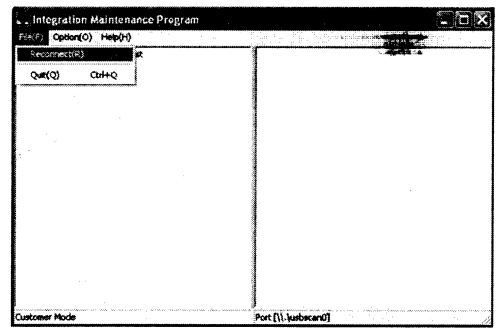


3) PC side:
Boot the maintenance program. Select the model icon.

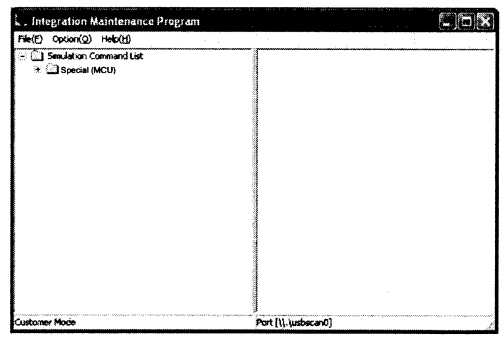


4) PC side:
Confirm that the "Simulation Command List" tree is displayed on the maintenance program.

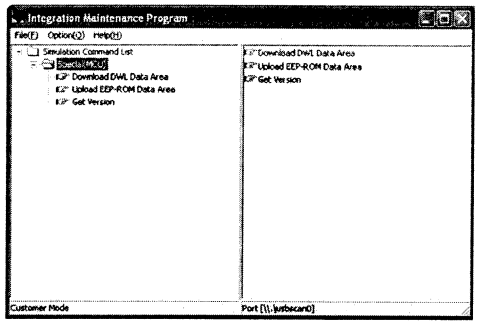
5) PC side:
When the message "the main body has not got started running" is displayed on the lowest area of the figure below after the "maintenance program" is started up, select the "File" and then "Reconnect" in the menu bar.



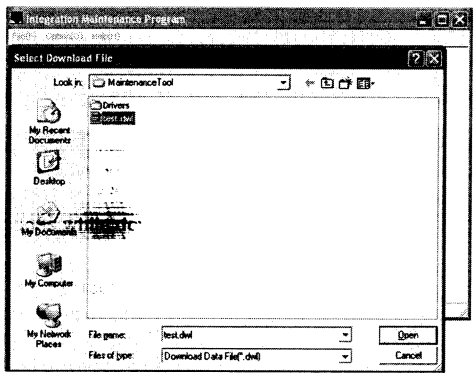
6) PC side:
Confirm a tree is displayed under the "Special (MCU)" on the maintenance program". (If no tree is displayed, confirm that the USB is connected and select the "Reconnect" (the above 5) again.)



7) PC side:
Double click "Special (MCU)" in the main tree item to develop the sub tree items, and double click "DWL Download" in the sub tree items.

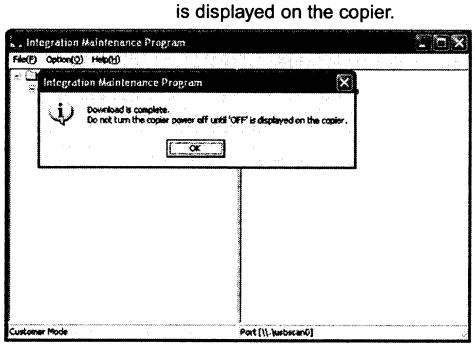


8) PC side:
Specify the download file (*.dwl).



9) PC side:
The download file is specified, download is automatically performed. The "Automatic paper selection" lamp and "Start" lamp will blink approximately 15 seconds after the download file is specified.

10) PC side:
When the message below is displayed, download is completed.
Completion message: Download is complete.
Do not turn the copier power off until 'OFF' is displayed on the copier.



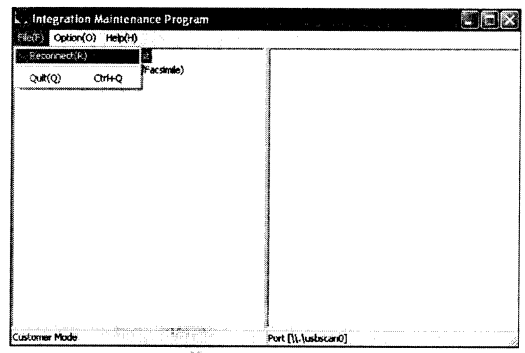
NOTE (Important):
•Be sure that the power is not turned off and the USB cable is not removed until the word "OFF" appears.

11) Main body side:
Wait until the word "OFF" appears on the operation panel.
The appearance of "OFF" indicates the completion of the download (writing into ROM).
Turn the power off.

12) After-process: Terminate the maintenance program, and turn on the power of the main body.

After the download (data transmission) has been completed, exit the software program. The USB cable can be removed at this point.

NOTE:
•For making a second connection with another machine, select the "File" and "Reconnect" in the menu bar on the maintenance program at the time of the USB being re-connected. Repeat the previous procedures from the above 5).



*** Forbidden actions while downloading (Important)**

Failure in the download concerned may not allow you to conduct the subsequent download procedures. Added care should be taken to avoid having the situation below arise while downloading.
•Switching off the main body of d-Copia 16W/20W.
•Disconnecting the download cable (USB cable).

*** If the above inhibit item occurs during downloading:**

Turn OFF and ON the power.
1) If "d" (which means downloading) is displayed on the operation panel LED of the machine, perform downloading again.
2) If "d" (which means downloading) is not displayed on the operation panel LED of the machine, turn OFF the power, and press and hold the INTERRUPT key and the DUAL PAGE COPY key and turn ON the power. If, then, "d" (which means downloading) is displayed on the operation panel LED of the machine, perform downloading again. If "d" is still not displayed, the MCU must be replaced.

3. Installation procedure

A. USB joint maintenance program installation

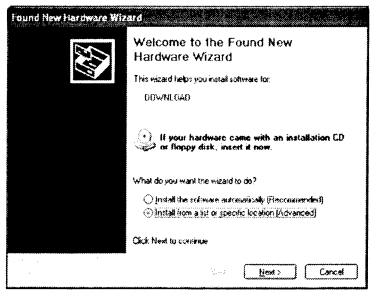
Create the "Maintenance Tool" folder and copy the maintenance tool in it. The driver is installed by plug and play.

B. Installation procedure on Windows XP

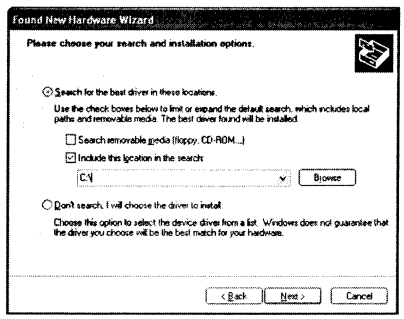
1) Machine side:
Executable by performing the Service Simulation No. 49-01 (Flash Rom program-writing mode).
(A word "d" appears on the operation panel to denote the download mode status.)

2) Connect the machine and the PC with a USB cable.

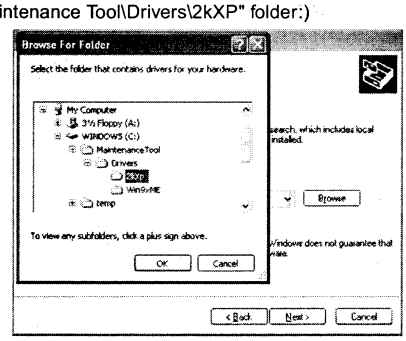
3) Check that the following display is shown.
Select "Install from a list or the specific location" and press the NEXT button.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
DOWNLOAD
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
Next >
Cancel

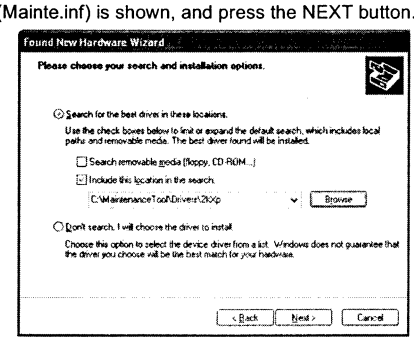
4) Select "Include this location in the serch". If the retrieval area does not include the folder which includes the maintenance tool driver (Mainte.inf), select "Browse"
If the folder path is properly shown, press the NEXT button to go to procedure 7).


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

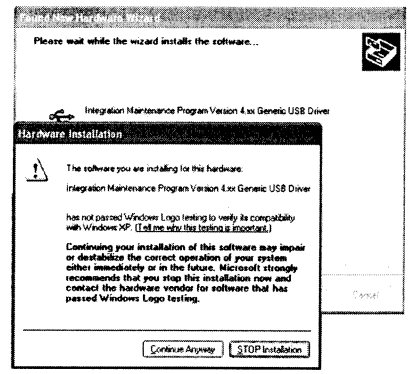
5) Select the folder which includes the maintenance tool driver (Mainte.inf), and press the OK button.
(When the driver (Mainte.inf) is included in the "C:\Maintenance Tool\Drivers\2kXP" folder:)



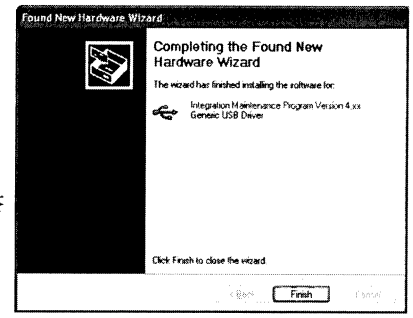
6) Check that the path to the folder which includes the maintenance tool driver (Mainte.inf) is shown, and press the NEXT button.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\MaintenanceTool\Drivers\2kXp
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

7)) Check that the following display is shown. Press the Continue Anyway button.


Please wait while the wizard installs the software...
Integration Maintenance Program Version 4.xx Generic USB Driver
Hardware Installation
The software you are installing for this hardware:
Integration Maintenance Program Version 4.xx Generic USB Driver
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

8) When installation is completed, the following display is shown.
Press the Finish button.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Integration Maintenance Program Version 4.xx Generic USB Driver
Click Finish to close the wizard.
< Back
Finish
Cancel

The installation procedure (on Windows XP) is completed with the above operation.

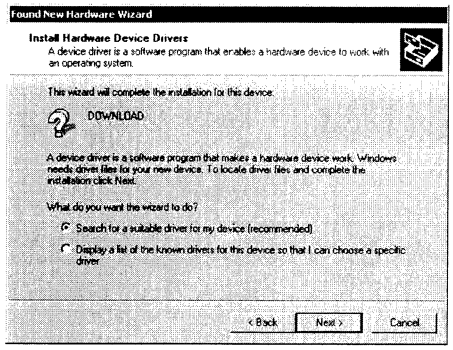
C. Installation procedure on Windows 2000

1) Machine side:
Executable by performing the Service Simulation No. 49-01 (Flash Rom program-writing mode).
(A word "d" appears on the operation panel to denote the download mode status.)

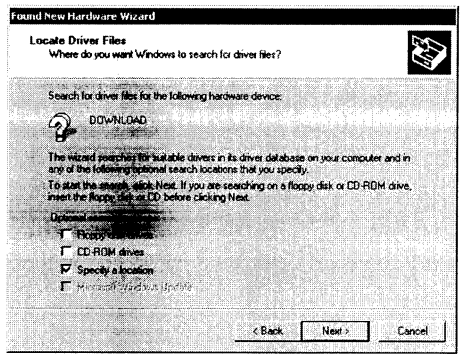
2) Connect the machine and the PC with a USB cable.
3) Check that the new hardware search wizard is shown. Press the NEXT button.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

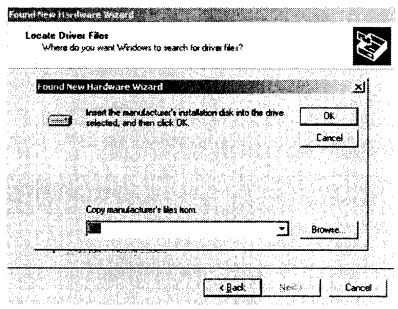
4) Select "Serch for a suitable driver for my device" and press the NEXT button.


Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
DOWNLOAD
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

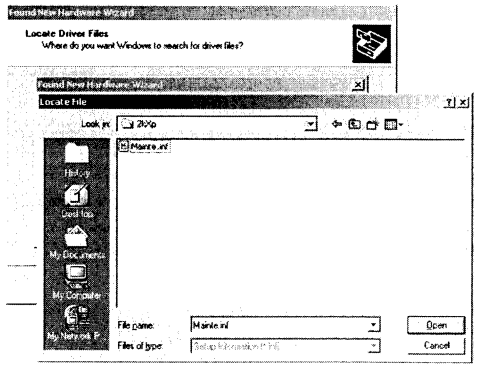
5) Select "Specify a location" and press the NEXT button.


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
DOWNLOAD
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< Back
Next >
Cancel

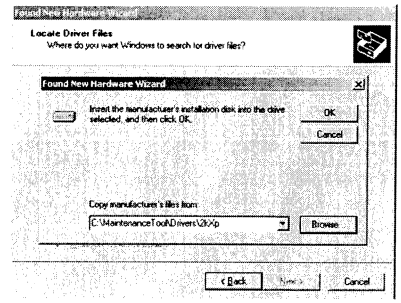
6) Specify the folder which includes the maintenance tool driver and press the <OK> button.(Go to the procedure 8)
Press the <Browse> button, if not includes the maintenance tool driver.


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Found New Hardware Wizard
Insert the manufacturer's installation disk into the drive selected, and then click OK.
OK
Cancel
Copy manufacturer's files from:
Browse...
< Back
Next >
Cancel

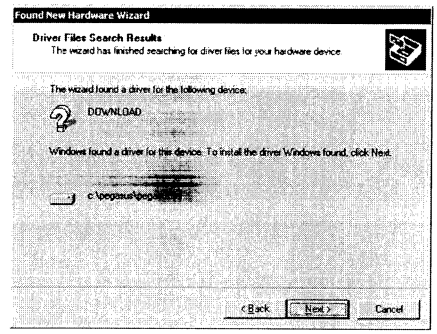
Specify the path of the folder in which the maintenance tool driver (Mainte.inf) is included, and press <Open> button.



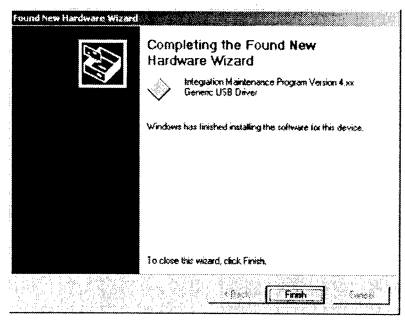
7) Check that the path to the folder which includes the maintenance tool driver (Mainte.inf) is properly displayed, and press the NEXT button.
Create the "Maintenance Tool" folder in the C drive.
(When the driver (Mainte.inf) is included in the "C:\maintenance Tool\Drivers\2kXP" folder:)



8) Press the NEXT button, and installation is started.


Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
DOWNLOAD
Windows found a driver for this device. To install the driver Windows found, click Next.
c:\pegasus\peg...
< Back
Next >
Cancel

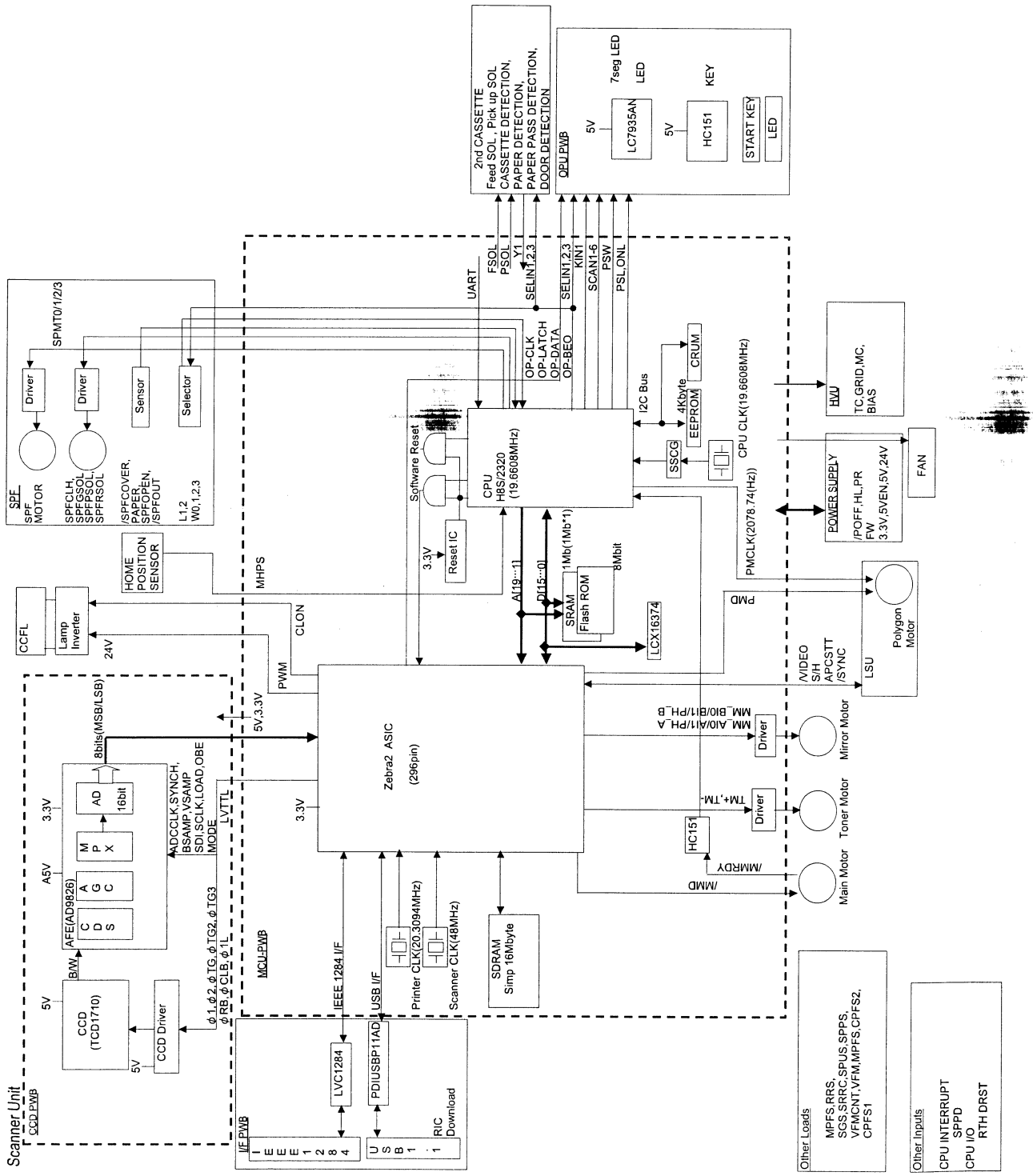
9) When installation is completed, the following display is shown.
Press the Finish button.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
Integration Maintenance Program Version 4.xx
Generic USB Driver
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

The installation procedure of the joint maintenance program on Windows 2000 is completed with the above operation.

[13] ELECTRICAL SECTION

1.Block diagram



2.Circuit descriptions

A. Main PWB (MCU)

(1) Operation circuit

a. General

The operation circuit is composed of the key matrix circuit and the display matrix circuit.

b. Key matrix circuit

Select signals SELIN 1 - 3 are sent from the CPU of the MCU to the selector in the operation circuit.
The signals detecting OFF/ON of the key are sent to the CPU as KIN 1 - 2.

c. Display circuit

The display is controlled by sending the data signal from the CPU of the MCU, the clock signals, and the latch signals from the ASIC to the LED driver in the operation circuit.

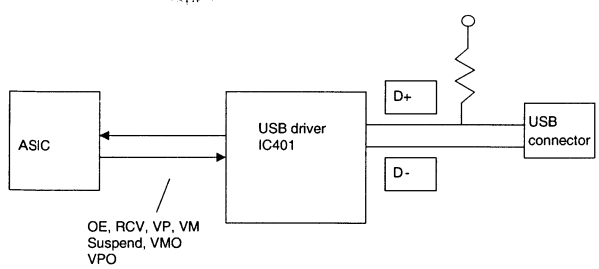
(2) I/F circuit

a. General

The I/F circuit is composed of the USB driver and the IEEE1284 driver, and performs hard interface with the ASIC (MCU PWB).

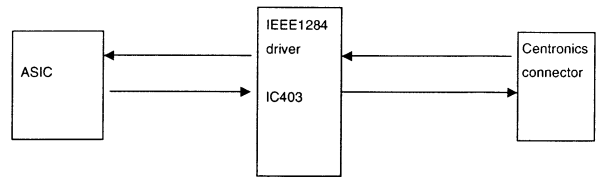
b. USB circuit

With the USB driver, the differential signals (analog) of USB are converted into digital signal, which are sent to the ASIC. In the reverse procedure, interface between the ASIC (engine) and the host is performed.



c. IEEE1284 circuit

The IEEE1284 driver is used to perform interface between the ASIC (engine) and the host.



(3) Carriage unit

a. General

The carriage unit is provided with the CCD PWB, the inverter PWB, and the lamps. It scans documents and transfers AD-converted image data to the ASIC.

b. CCD PWB

The CCD on the CCD PWB employs the color image sensor uPD8861 of 5400 pixels x 3 lines, and scans documents in the main scanning direction in the resolution of 600dpi/US letter size.
Image data scanned by the CCD are inputted to the AFE (AD9826), and subject to CDS, amplification, and AD-conversion. Then digital data are outputted to the MCU PWB and to the ASIC, which performs image process of the digital data.

c. Lamp inverter PWB

The transformer is controlled by the lamp control signal from the MCU PWB. The transformer output controls lighting of the cool cathode ray tube.

B. DC power circuit

The DC power circuit directly rectifies the AC power and performs switching-conversion with the DC/DC converter circuit, and rectifies and smoothes again to generate a DC voltage.
The constant voltage control circuit is of +5VEN. +24V are of the non-control system by winding from the +5VEN winding. As shown in fig (1), +24V, and +5V are provided with the ON/OFF function by external signals. +3.3V is outputted from +5VEN to the regulator IC. Refer to the block diagram, fig (1).

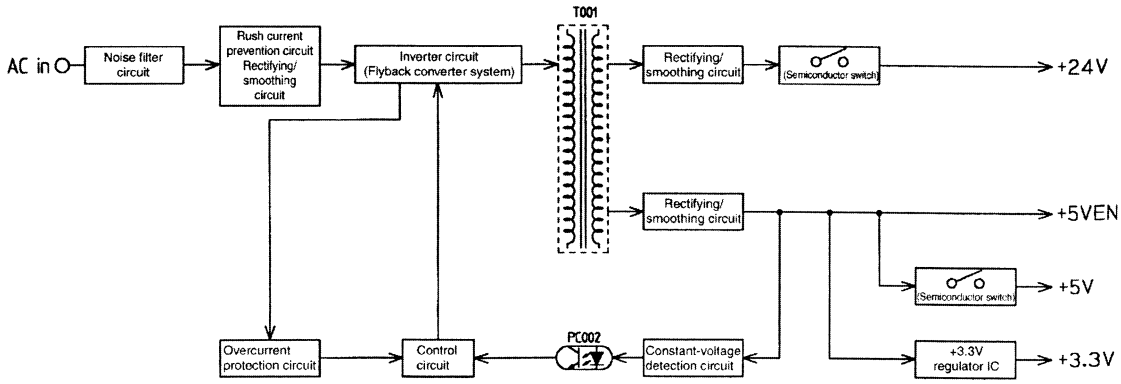


fig (1) Block diagram

(1) Noise filter circuit

The filter circuit is composed of L and C. It reduces common noises and normal mode noises generated from the AC line.
The common noise means that generated in each line for GND. Its noise component is delivered through C001, C003, and C007 to GND.
The normal noise means that overlapped in the AC line or the output line. It is attenuated by C002, L001, C006, and L002. Refer to fig (2).

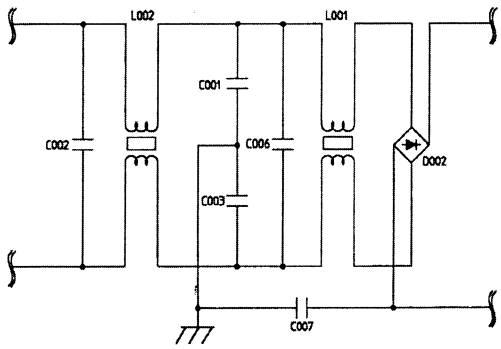


fig (2) Noise filter circuit

(2) Rush current prevention circuit and rectifying/smoothing circuit

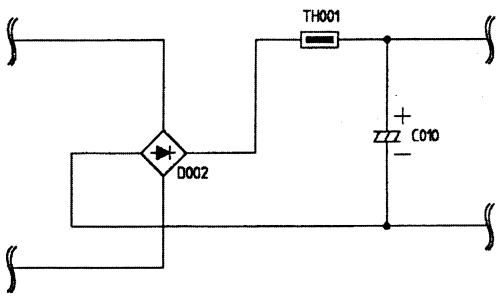


fig (3) Rush current prevention, rectifying/smoothing circuit

fig (3) Rush current prevention, rectifying/smoothing circuit Since the AC power is directly rectified, if there were not this rush current prevention resistor (TH001), an extremely large rush current would flow due to a charging current flowing through the smoothing capacitor C010 when turning on the power.
To prevent against this, the rush current prevention resistor TH001 is provided between the rectifying diode D002 and the smoothing diode C010, suppressing a rush current.
The rectifying/smoothing circuit rectifies a 50/60Hz AC voltage with the rectifying circuit, and smoothes it with the smoothing capacitor C010.

(3) Inverter and control circuit (Flyback converter system)

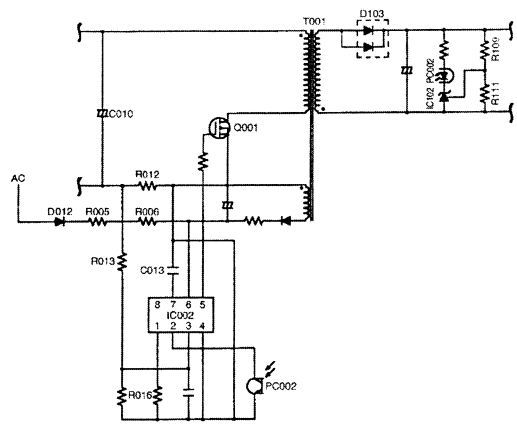


fig (4) Inverter and control circuit

This circuit is one-stone separate excitation DC-DC converter called flyback converter, as shown in fig (4).
When an electromotive voltage of IC is applied through D012, R005, and R006 to IC002, IC002 oscillates to conduct Q001.
As a result, a voltage is applied to the primary winding of the converter transformer (T001) and at the same time a voltage is generated in the driving winding of IC002 to operate IC002. Then IC002 turns ON/OFF Q001 at the frequency of about 70KHz determined by R016.
Under the ON state, the voltage in the secondary winding is reversed to the diode D103 and no current flows through the secondary winding of T001.
Under the OFF state, the current flowing through the primary winding is in the same direction as the primary winding, conducting D103 and transmitting energy to the secondary winding. Refer to fig (4).

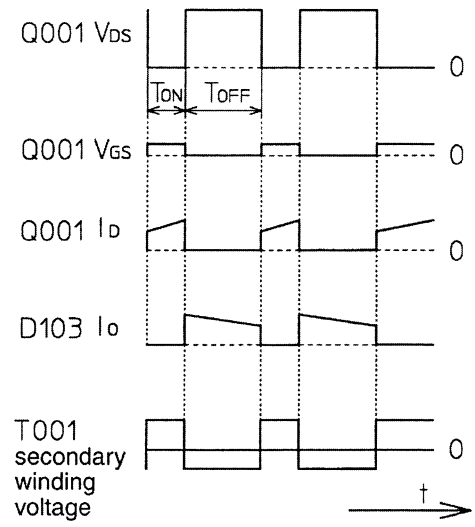


fig (5) Operation waveform of the flyback converter

The control circuit is subject to negative feedback from the secondary side as shown in fig (4). A photo coupler (PC002) is employed to insulate between the primary side and the secondary side to feed back the control signal to the primary side.
When the output voltage is increased by energy transmission from T001, the voltage detected by R109 and R111 is compared with the reference voltage of IC102. When it exceeds the reference voltage, the current flowing through IC102 (that is, the photo diode current of PC002) is increased and transmitted to the primary side. Then the potential at the feedback pin (2 pin) of IC102 is decreased to control Q001. Therefore, the change in the output voltage on the secondary side is passed through IC102 and PC002 to control Q001, stabilizing the output voltage.

(4) Overcurrent protection circuit (Primary side)

The inverter circuit of the primary side is connected with the current detection resistor R012. When an overcurrent occurs in the secondary side, the current flowing through the primary side inverter Q001 is increased. The current is detected by R012, and passed through R013 to IC002 overcurrent restricting pin (3 pin) to turn OFF Q002, shutting off all power. To resupply the power, turn off and on the power. Refer to fig (4).

(5) Rectifying/smoothing circuit (+5V)

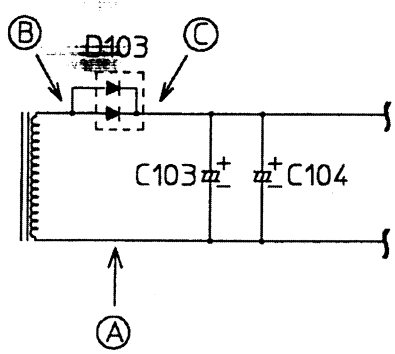


fig (6) Rectifying/smoothing circuit

The high frequency pulse generated by the inverter circuit is decreased by the converter transformer, rectified by the high frequency diode D103, and smoothed by C103 and C104.

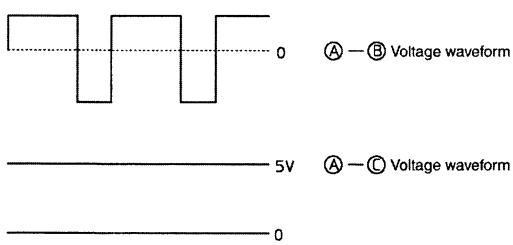
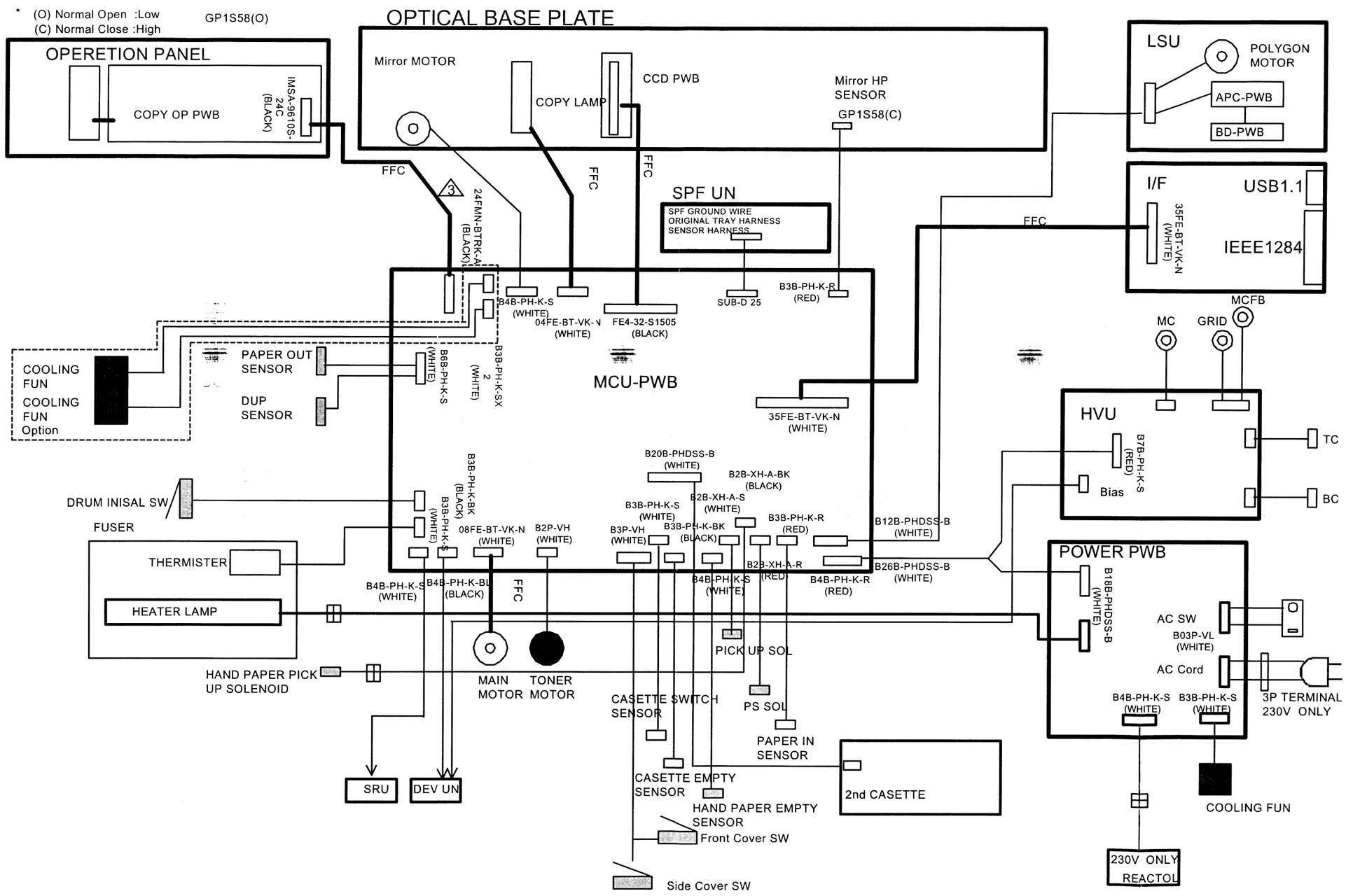
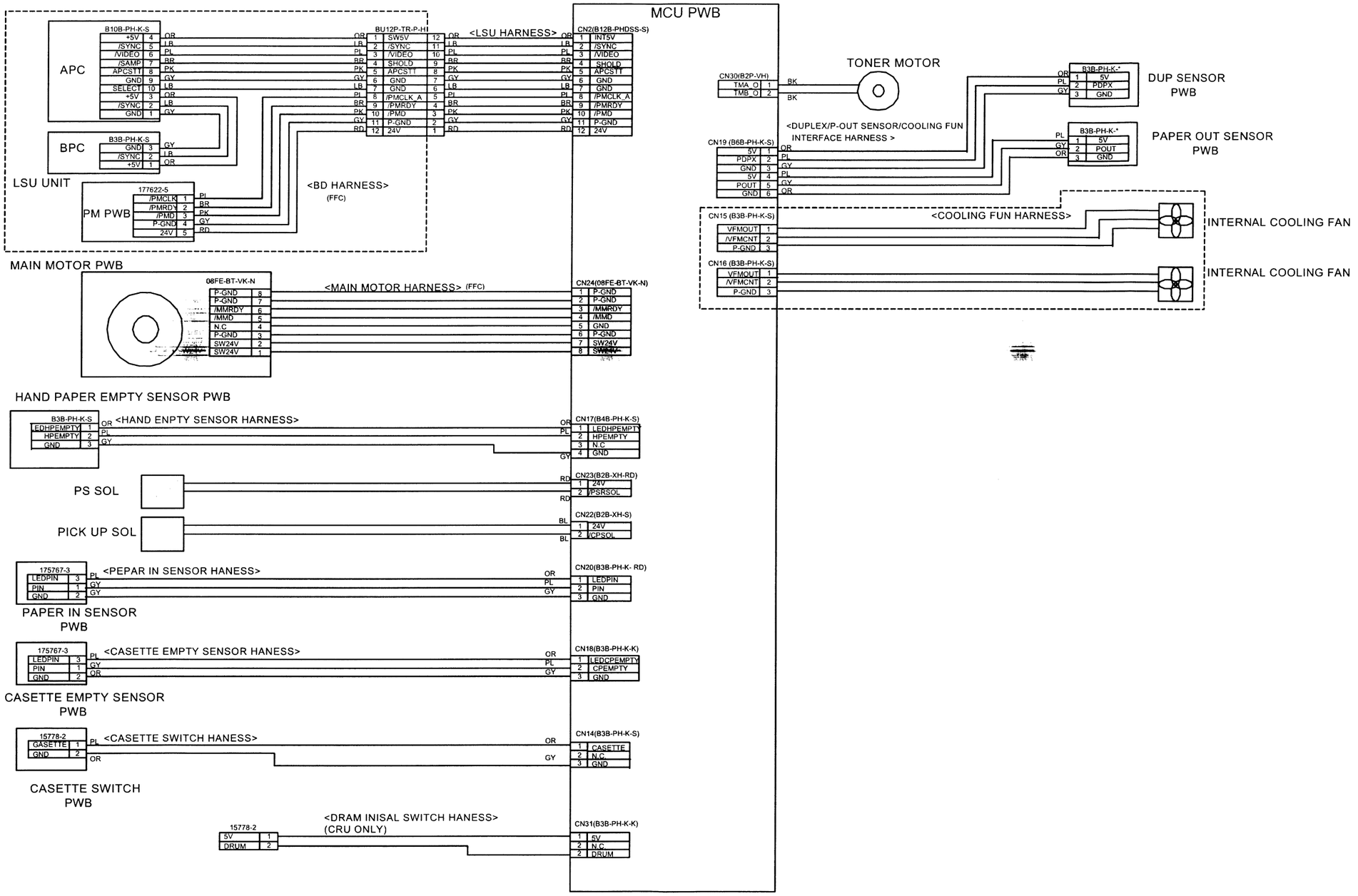


fig (7) +5V rectifying/smoothing circuit voltage waveform

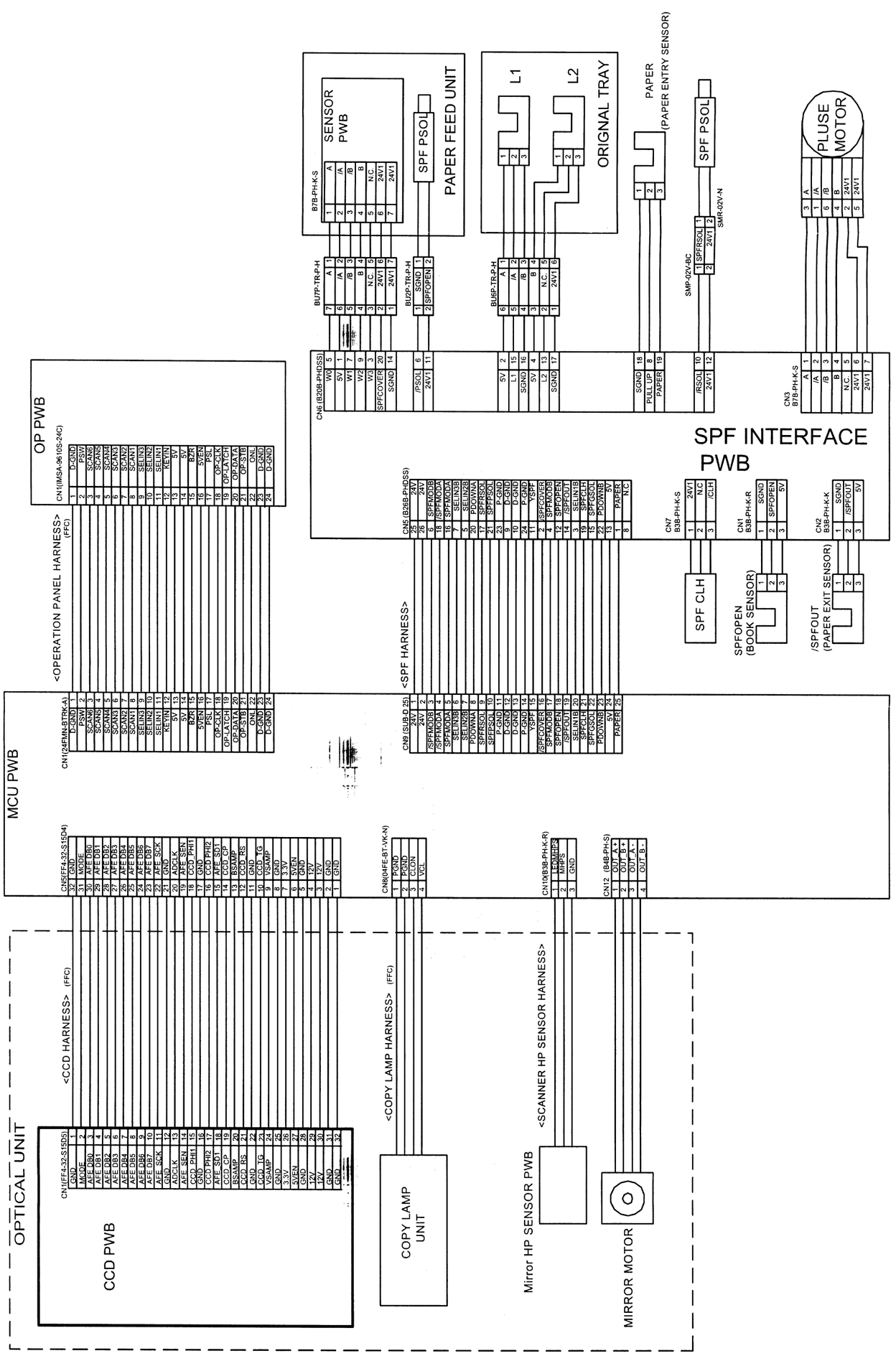
3.Actual wiring diagram

ACTUAL WIRING DIAGRAM 1/6

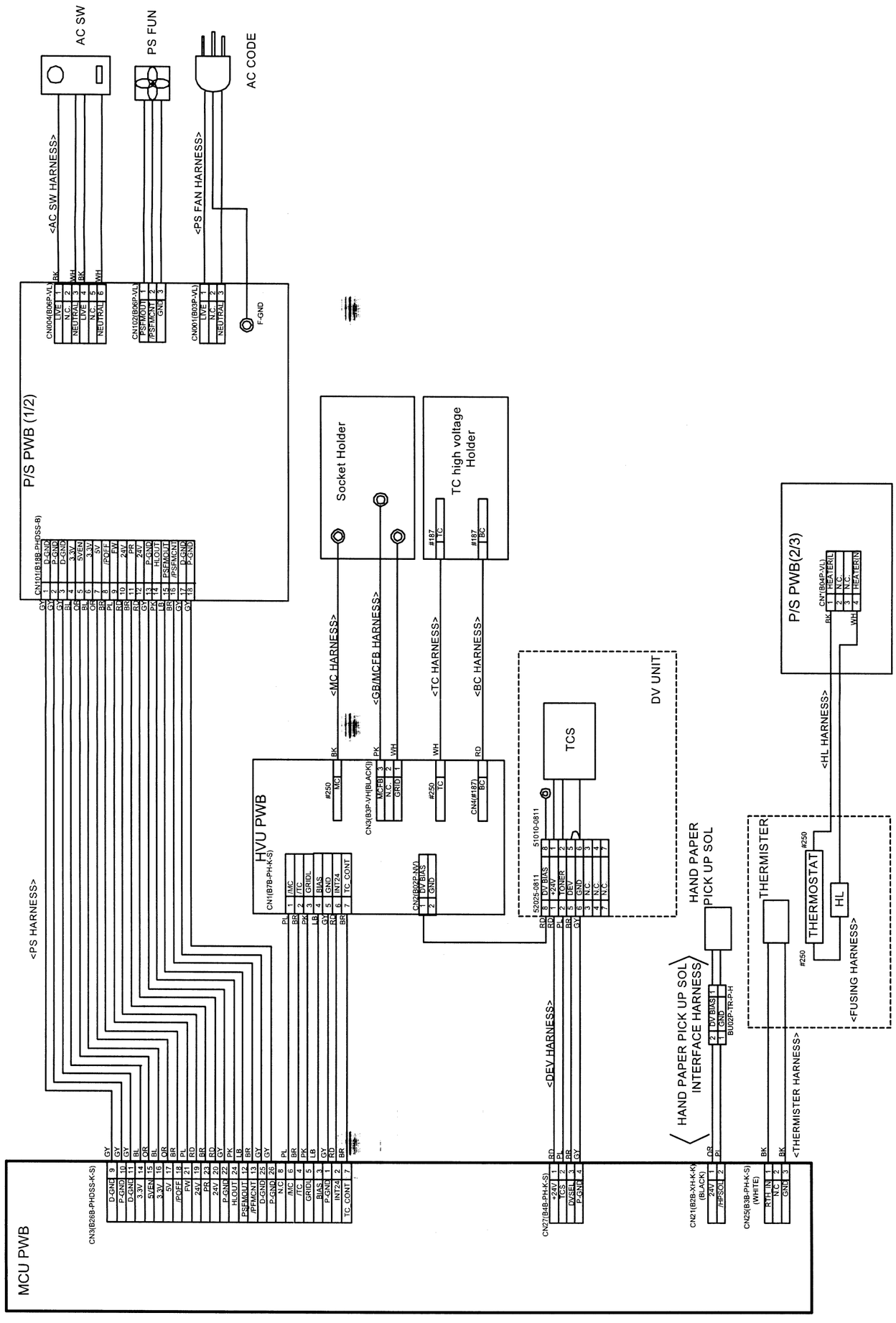



MCU PWB
APC
BPC
LSU UNIT
B10B-PH-K-S
+5V 4
/SYNC 5
/VIDEO 6
/SAMP 7
APCSTT 8
GND 9
SELECT 10
+5V 3
/SYNC 2
GND 1
B3B-PH-K-S
GND 3
/SYNC 2
+5V 1
BU12P-TR-P-H
<LSU HARNESS>
CN2(B12B-PHDSS-S)
/INT5V
/SYNC
/VIDEO
SHOLD
APCSTT
GND
/PMCLK_A
/PMRDY
/PMD
P-GND
24V
PM PWB
177622-5
/PMCLK
/PMRDY
/PMD
P-GND
24V
<BD HARNESS>
(FFC)
MAIN MOTOR PWB
08FE-BT-VK-N
<MAIN MOTOR HARNESS> (FFC)
CN24(08FE-BT-VK-N)
P-GND
/MMRDY
/MMD
N.C
SW24V
HAND PAPER EMPTY SENSOR PWB
B3B-PH-K-S
LEDHPEMPTY
HPEMPTY
GND
<HAND ENPTY SENSOR HARNESS>
CN17(B4B-PH-K-S)
LEDHPEMPTY
HPEMPTY
N.C
PS SOL
PICK UP SOL
CN23(B2B-XH-RD)
/PSRSOL
CN22(B2B-XH-S)
/CPSOL
175767-3
LEDPIN
PIN
<PEPAR IN SENSOR HANESS>
CN20(B3B-PH-K- RD)
PAPER IN SENSOR PWB
<CASETTE EMPTY SENSOR HANESS>
CN18(B3B-PH-K-K)
LEDCPEMPTY
CPEMPTY
CASETTE EMPTY SENSOR PWB
15778-2
CASETTE
<CASETTE SWITCH HANESS>
CN14(B3B-PH-K-S)
CASETTE
N.C
CASETTE SWITCH PWB
<DRAM INISAL SWITCH HANESS>
(CRU ONLY)
CN31(B3B-PH-K-K)
5V
DRUM
TONER MOTOR
CN30(B2P-VH)
TMA_O
TMB_O
<DUPLEX/P-OUT SENSOR/COOLING FUN
INTERFACE HARNESS >
CN19 (B6B-PH-K-S)
PDPX
POUT
B3B-PH-K-*
DUP SENSOR PWB
PAPER OUT SENSOR PWB
<COOLING FUN HARNESS>
CN15 (B3B-PH-K-S)
CN16 (B3B-PH-K-S)
VFMOUT
/VFMCNT
INTERNAL COOLING FAN
INTERNAL COOLING FAN

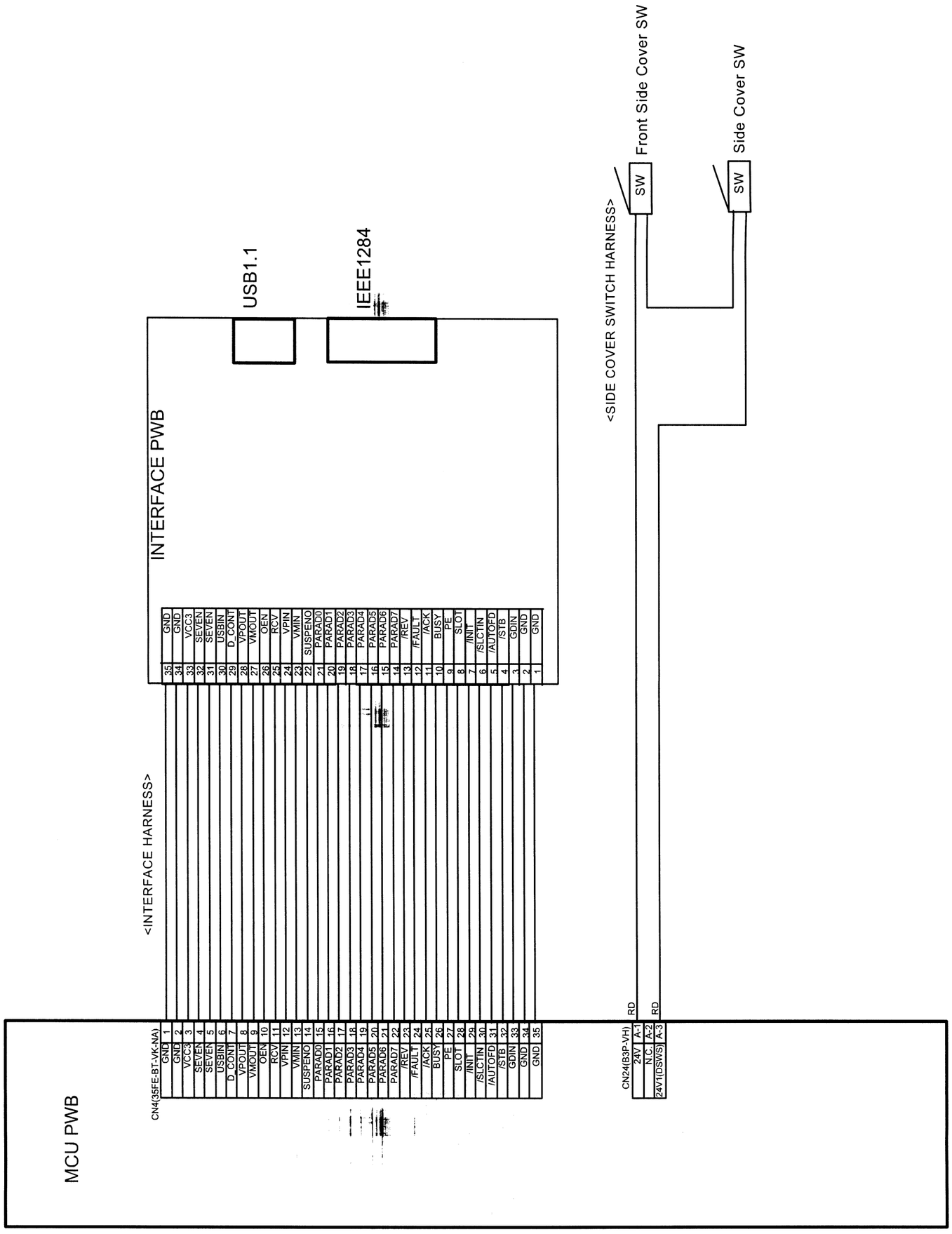
ACTUAL WIRING DIAGRAM 3/6



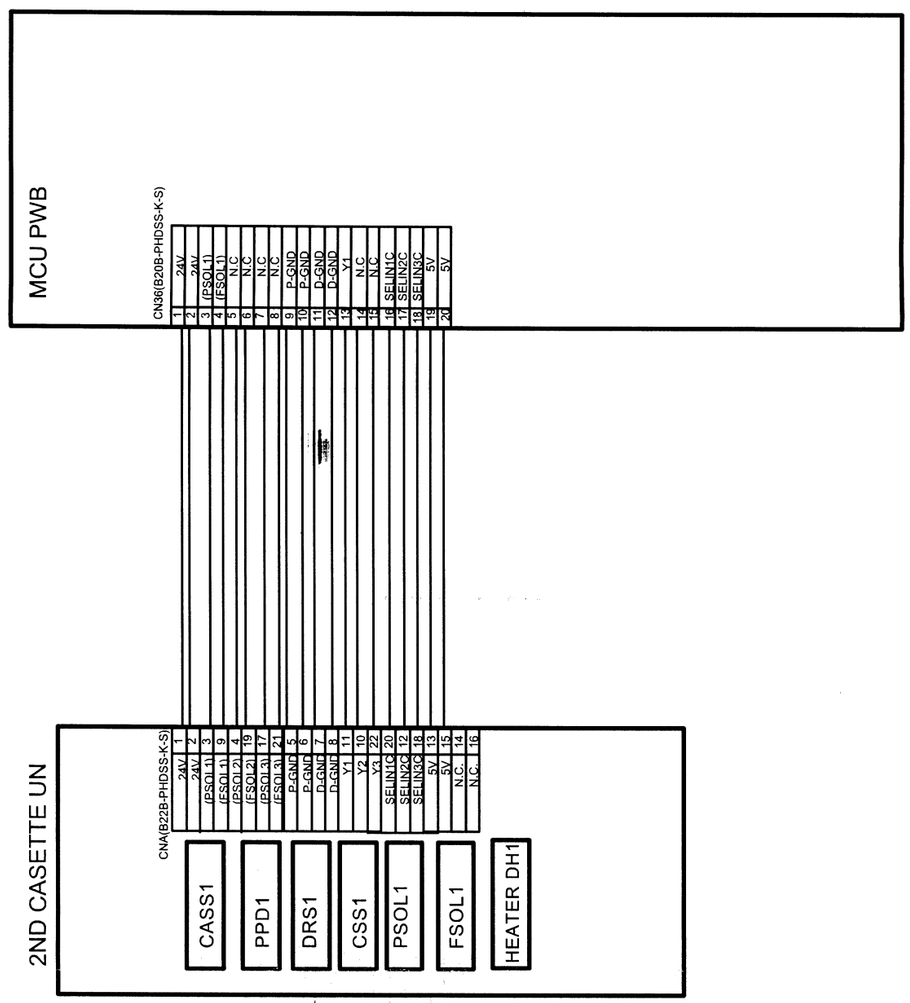
ACTUAL WIRING DIAGRAM 4/6



ACTUAL WIRING DIAGRAM 5/6



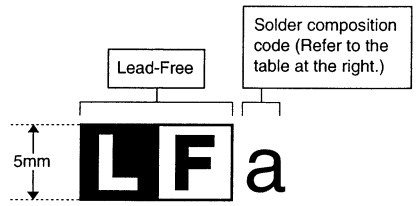
ACTUAL WIRING DIAGRAM 6/6



LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder.
The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.
Never use conventional lead solder thread, which may cause a breakdown or an accident.
Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.
Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.
If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.
If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.